FCC RADIO TEST REPORT

FCC ID: 2ACOP1020AGORA

Of

Product：	Smart Phone
Trade Name：	Agora
Model Number：	Agora Ring Pro
Serial Model：	N/A
Report No.：	BZT140614F03

Prepared for

AGORA WHOLESALE SOCIEDAD ANONI

800M OESTE DE LOS JARDINES DEL RECUERDO Y 75 NORTE DEL AM-PM, BODEGAS LAGUNILLA BODEGA # 14,LAGUNILLA DE HEREDIA HEREDIA,COSTA RICA

Prepared by

Shenzhen STS Test Services Co., Ltd.

1/F, Building 2, Zhuoke Science Park, Chongqing Road, Fuyong, Bao' an District, Shenzhen,China

TEST RESULT CERTIFICATION

Applicant's name	AGORA WHOLESALE SOCIEDAD ANONI
Address.....	800M OESTE DE LOS JARDINES DEL RECUERDO Y 75 NORTE DEL AM-PM,BODEGAS LAGUNILLA BODEGA # 14, LAGUNILLA DE HEREDIA HEREDIA,COSTA RICA
Manufacture's Name	Shenzhen Kaliho Technology Development Limited
Address.....	Rm1901, Block A, The Stars Plaza, Huaqiang North Rd., Futian District,Shenzhen,China
Product description	
Product name.....	Smart Phone
Band name	Agora
Model and/or type reference	Agora Ring Pro
Standards	FCC Part15.247
Test procedure	ANSI C63.4-2003

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test	
Date (s) of performance of tests	June 11, 2014 ~ June 15, 2014
Date of Issue	June 16, 2014
Test Result.....	**Pass**

Testing Engineer : Lynn Chen

(Lynn Chen)

Technical Manager : Carlen

(Carlen Liu)

Authorized Signatory : Tommy Zhang

(Tommy zhang)

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247(a)(1)	Hopping Channel Separation	PASS	
15.247(b)(1)	Peak Output Power	PASS	
15.247(c)	Radiated Spurious Emission	PASS	
15.247(a)(iii)	Number of Hopping Frequency	PASS	
15.247(a)(iii)	Dwell Time	PASS	
15.247(a)(1)	Bandwidth	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)” N/A” denotes test is not applicable in this Test Report

1.1 TEST FACILITY

BZT Testing Technology Co., Ltd
Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.
FCC Registration No.: 701733

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Smart Phone</td></tr>
<tr><td>Trade Name</td><td>Agora</td></tr>
<tr><td>Model Name</td><td>Agora Ring Pro</td></tr>
<tr><td>Serial Model</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>The EUT is a Smart Phone
<table>
<tr><td>Operation Frequency:</td><td>2402~2480 MHz</td></tr>
<tr><td>Modulation Type:</td><td>FHSS</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>GFSK(1Mbps),π/4-DQPSK(2Mbps),8-DPSK(3Mbps)</td></tr>
<tr><td>Number Of Channel</td><td>79 CH</td></tr>
<tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr>
<tr><td>Antenna Gain(Peak)</td><td>0.8 dBi</td></tr>
</table></td></tr>
<tr><td>Frequency Bands:</td><td>☒GSM 850 ☒PCS 1900 (U.S. Bands)
☒GSM 900 ☒DCS 1800 (Non-U.S. Bands)
U.S. Bands:
☐UMTS FDD Band II ☒UMTS FDD Band V
Non-U.S. Bands:
☒UMTS FDD Band I ☐UMTS FDD Band VIII</td></tr>
<tr><td>Wifi</td><td>Frequency:2412 – 2462 MHz
Modulation: CCK/OFDM/DBPSK/DAPSK</td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Adapter</td><td>Adapter
Input:AC 100-240V,50/60Hz
Output:DC 5V,500mA</td></tr>
<tr><td>Battery</td><td>Rated Voltage: 3.7V
Charge Limit: 4.2V
capacity :1500mAh</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	Chip Antenna	NA	0.8	BT Antenna

The EUT antenna is integral Antenna. no antenna other than that furnished by the responsible party shall be used with the device.

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH00
Mode 2	CH39
Mode 3	CH78

For Conducted Emission	
Final Test Mode	Description
Mode4	Charging

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH00
Mode 2	CH39
Mode 3	CH78

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

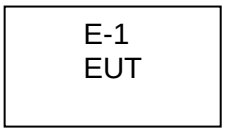
2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of FHSS

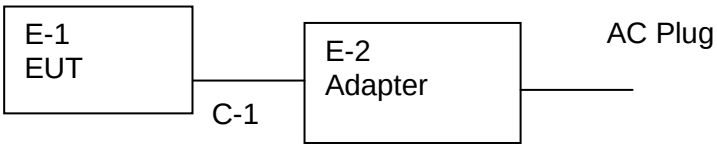
Test software Version	Test program: N/A		
Frequency	2402 MHz	2441 MHz	2480 MHz
Parameters(1Mbps)	DEF	DEF	DEF

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test



2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Smart Phone	Agora	Agora Ring Pro	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
C-1	No	No	1.5M	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2013.07.06	2014.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2014.06.08	2015.06.07	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2013.07.06	2014.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2014.06.06	2015.06.05	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2014.06.06	2015.06.05	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2013.07.06	2014.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2013.07.06	2014.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2013.12.22	2014.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07	1 year
10	Power Meter	R&S	NRVS	100696	2013.07.06	2014.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2013.07.06	2014.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2014.06.06	2015.06.05	1 year
2	LISN	R&S	ENV216	101313	2013.08.24	2014.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2013.08.24	2014.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2014.06.06	2015.06.05	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2014.06.06	2015.06.05	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2014.06.08	2015.06.07	1 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

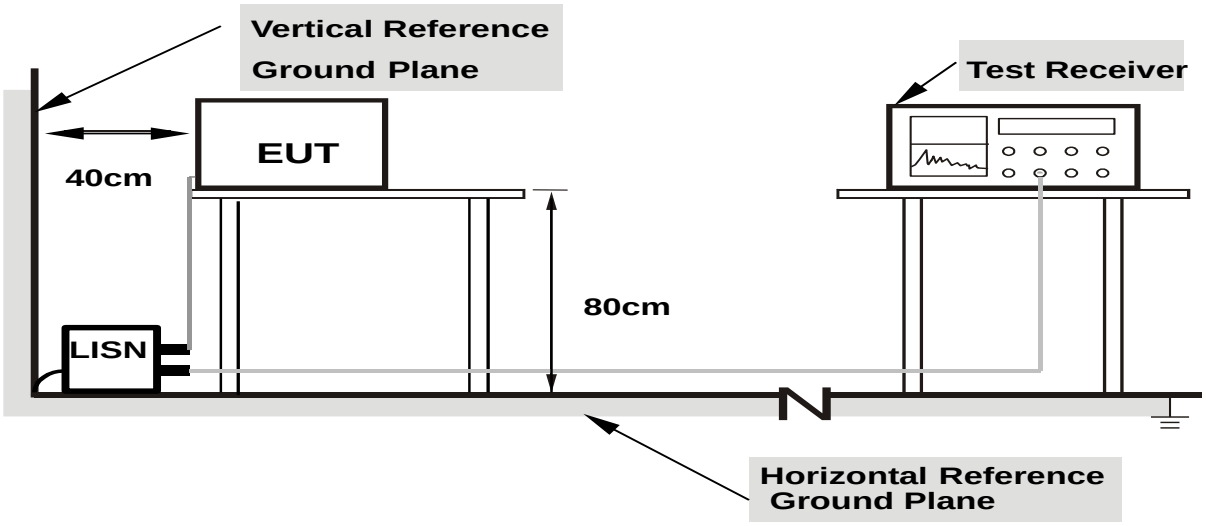
3.1.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

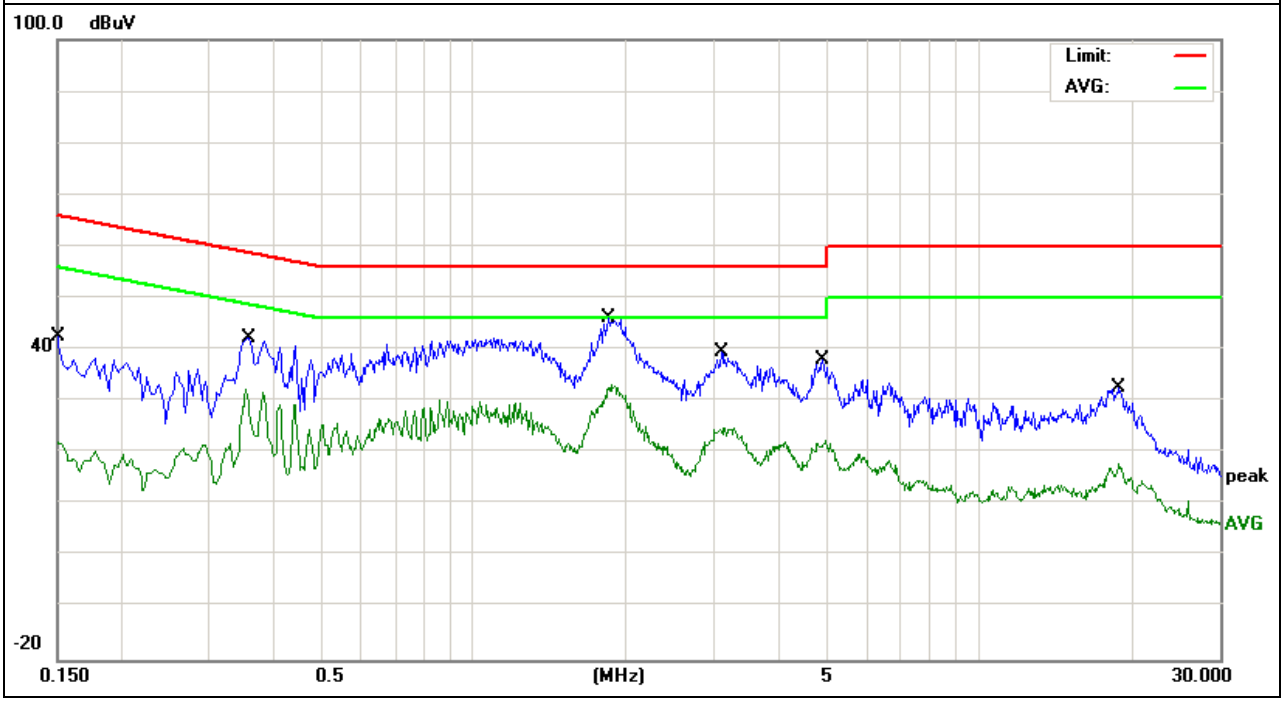
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

EUT：	Smart Phone	Model Name. ：	Agora Ring Pro
Temperature：	23 ℃	Relative Humidity：	50%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V from Adapter AC 120V/60Hz	Test Mode：	Link Mode

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
0.15	32.75	9.66	42.41	65.99	-23.58	QP
0.15	12.44	9.66	22.1	55.99	-33.89	AVG
0.358	32.77	9.52	42.29	58.77	-16.48	QP
0.358	22.7	9.52	32.22	48.77	-16.55	AVG
1.854	36.61	9.57	46.18	56	-9.82	QP
1.854	23.63	9.57	33.2	46	-12.8	AVG
3.102	29.85	9.58	39.43	56	-16.57	QP
3.102	15.27	9.58	24.85	46	-21.15	AVG
4.9059	28.38	9.6	37.98	56	-18.02	QP
4.9059	12.85	9.6	22.45	46	-23.55	AVG
18.9338	22.56	10.1	32.66	60	-27.34	QP
18.9338	7.77	10.1	17.87	50	-32.13	AVG

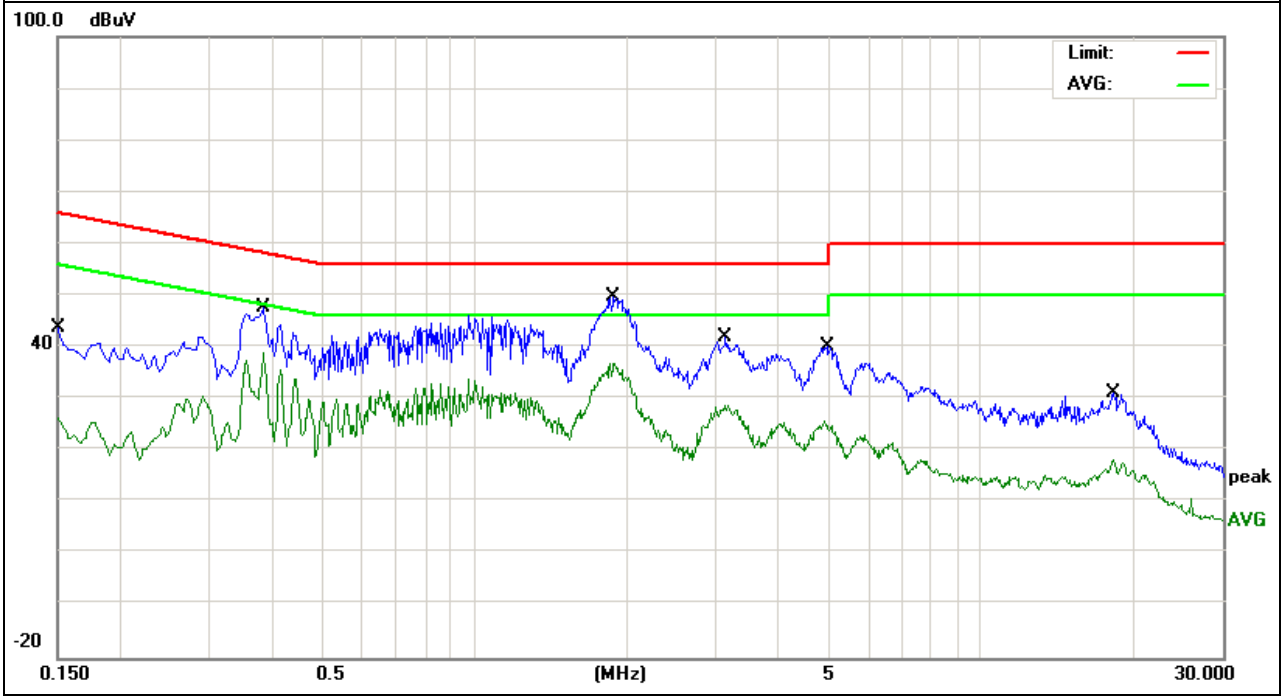
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Smart Phone	Model Name. ：	Agora Ring Pro
Temperature：	23 ℃	Relative Humidity：	50%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V from Adapter AC 120V/60Hz	Test Mode：	Link Mode

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
0.15	34.09	9.66	43.75	65.99	-22.24	QP
0.15	16.73	9.66	26.39	55.99	-29.6	AVG
0.382	38	9.52	47.52	58.23	-10.71	QP
0.382	29.37	9.52	38.89	48.23	-9.34	AVG
1.886	40.21	9.57	49.78	56	-6.22	QP
1.886	27.36	9.57	36.93	46	-9.07	AVG
3.13	32.5	9.58	42.08	56	-13.92	QP
3.13	19.26	9.58	28.84	46	-17.16	AVG
4.9739	30.54	9.6	40.14	56	-15.86	QP
4.9739	16.08	9.6	25.68	46	-20.32	AVG
18.3019	20.97	10.05	31.02	60	-28.98	QP
18.3019	8.14	10.05	18.19	50	-31.81	AVG

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

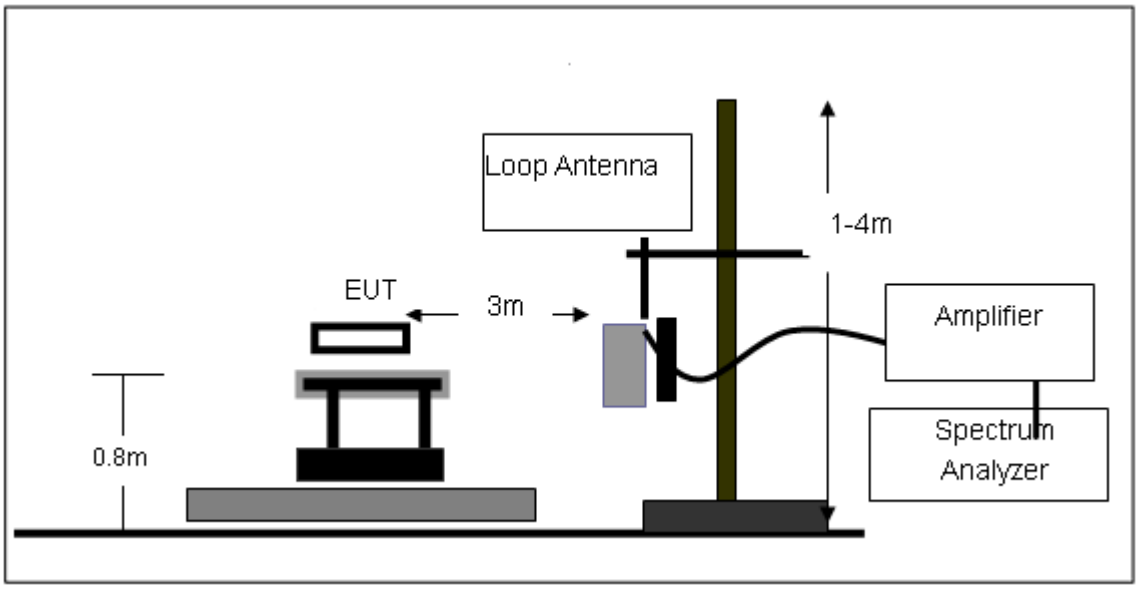
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

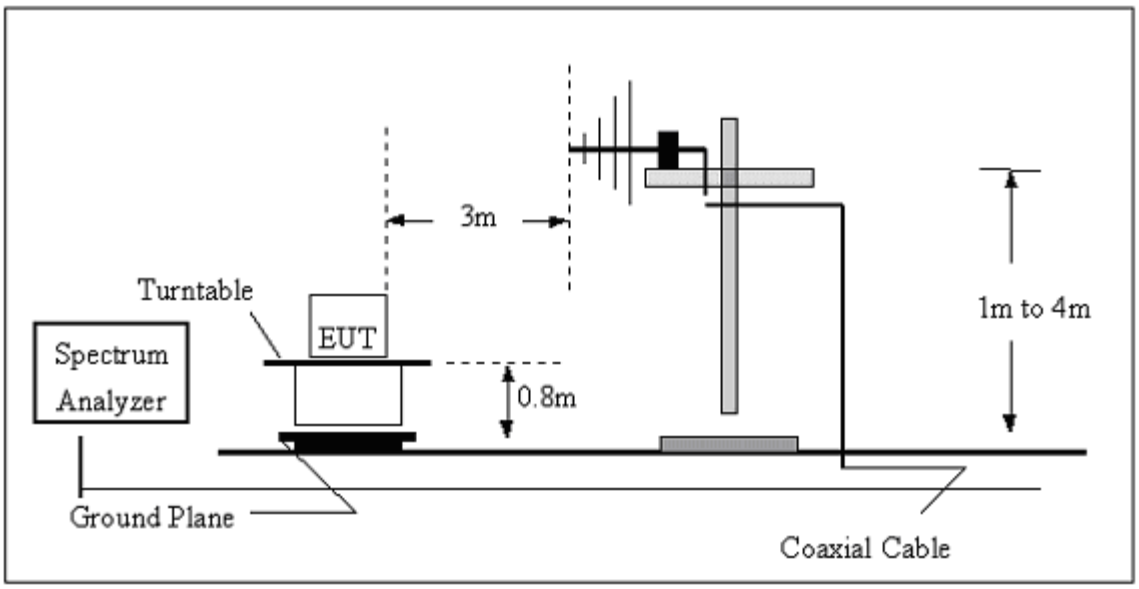
No deviation

3.2.4 TEST SETUP

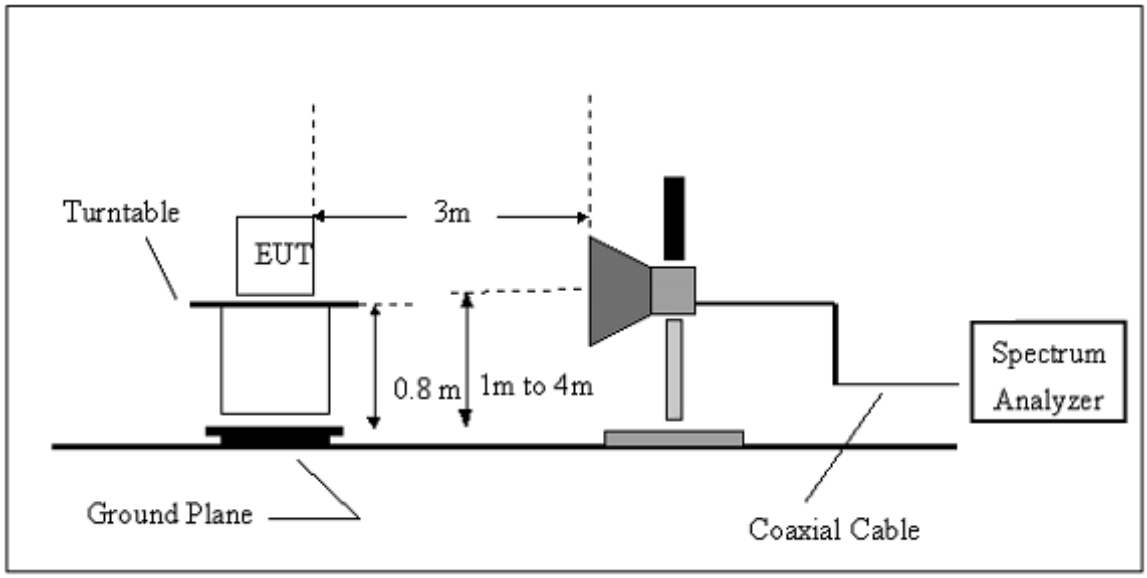
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BELOW 30 MHZ)

EUT：	Smart Phone	Model Name. ：	Agora Ring Pro
Temperature：	23 ℃	Relative Humidity：	50%
Pressure：	1010 hPa	Polarization :	---
Test Voltage ：	AC 120V		
Test Mode ：	TX Mode		

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

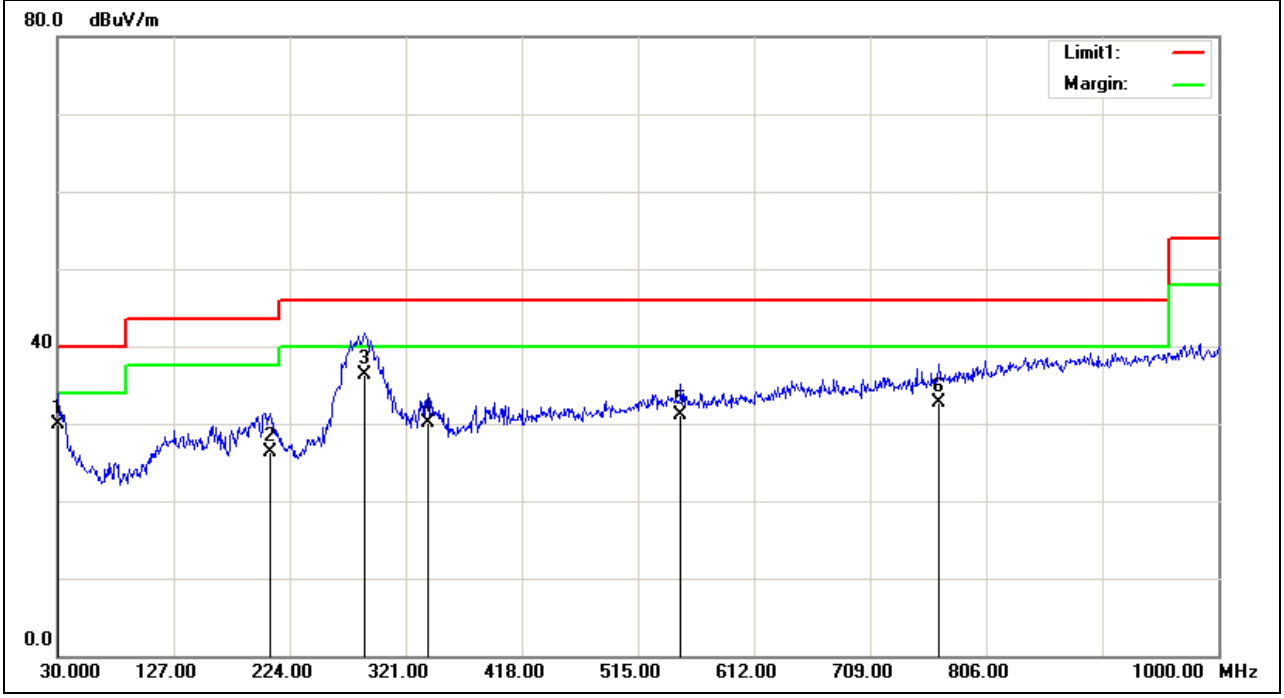
NOTE:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS (BETWEEN 30M – 1000 MHZ)

EUT：	Smart Phone	Model Name. ：	Agora Ring Pro
Temperature：	23 ℃	Relative Humidity：	50%
Pressure：	1010 hPa	Polarization：	Horizontal
Test Voltage ：	AC 120V		
Test Mode ：	TX Mode		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
30.9700	7.91	22.03	29.94	40.00	-10.06	QP
207.5100	13.22	13.18	26.40	43.50	-17.10	QP
287.2100	21.10	15.13	36.23	46.00	-9.77	QP
339.4300	14.34	15.74	30.08	46.00	-15.92	QP
550.8900	9.98	21.04	31.02	46.00	-14.98	QP
766.2300	9.37	23.31	32.68	46.00	-13.32	QP

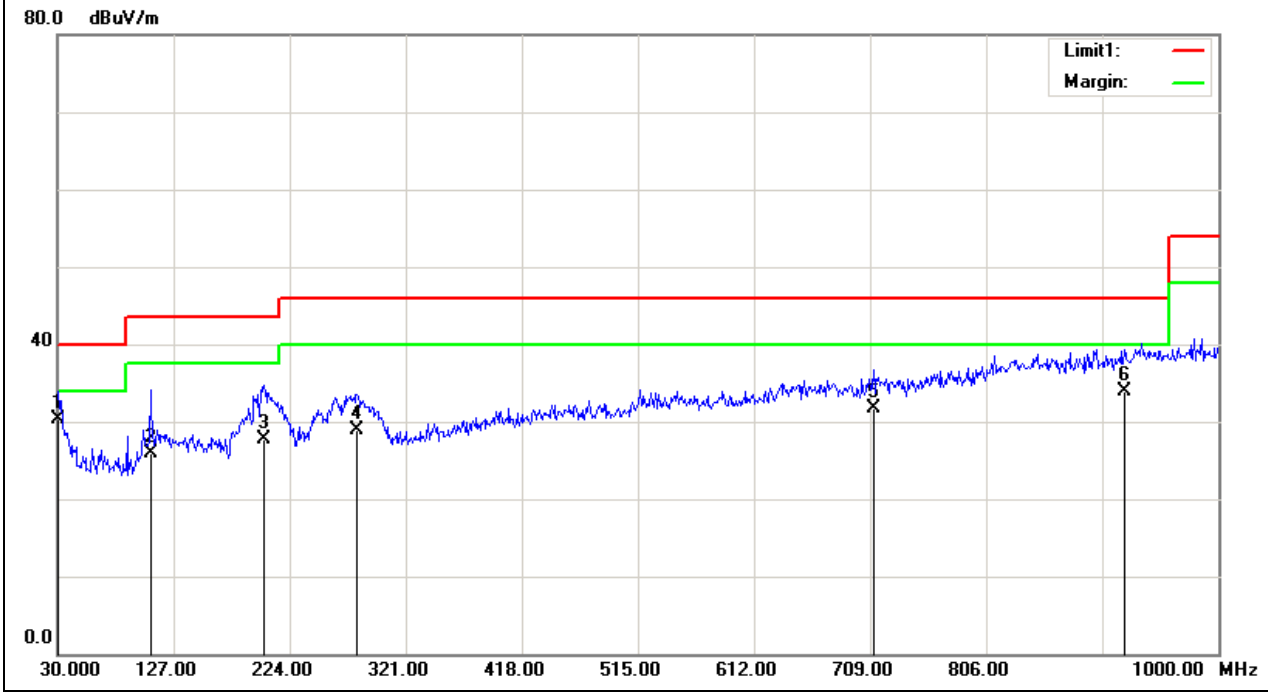
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Smart Phone	Model Name. ：	Agora Ring Pro
Temperature：	23 ℃	Relative Humidity：	50%
Pressure：	1010 hPa	Polarization：	Vertical
Test Voltage ：	AC 120V		
Test Mode ：	TX Mode		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
30.9700	8.22	22.03	30.25	40.00	-9.75	QP
108.2720	13.16	12.67	25.83	43.50	-17.67	QP
203.0510	14.45	13.31	27.76	43.50	-15.74	QP
280.2600	13.68	15.23	28.91	46.00	-17.09	QP
711.9100	9.07	22.55	31.62	46.00	-14.38	QP
921.4300	8.47	25.42	33.89	46.00	-12.11	QP

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

Radiated Spurious Emission (Transmitting)

30MHz~25GHz:(Scan with GFSK, π/4-DQPSK,8DPSK,the worst casw is BDR Mode (GFSK)

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Low Channel (2402 MHz)							
4804.283	63.27	-3.62	59.65	74	-14.35	Pk	Vertical
4804.283	45.36	-3.62	41.74	54	-12.26	AV	Vertical
7206.189	62.59	-0.9	61.69	74	-12.31	pk	Vertical
7206.189	43.75	-0.9	42.85	54	-11.15	AV	Vertical
4804.057	64.38	-3.64	60.74	74	-13.26	Pk	Horizontal
4804.057	45.29	-3.64	41.65	54	-12.35	AV	Horizontal
Mid Channel (2441 MHz)							
4882.164	63.56	-3.65	59.91	74	-14.09	Pk	Vertical
4882.164	45.27	-3.65	41.62	54	-12.38	AV	Vertical
7323.265	59.42	-0.82	58.6	74	-15.4	Pk	Vertical
7323.265	43.37	-0.82	42.55	54	-11.45	AV	Vertical
4882.184	62.34	-3.68	58.66	74	-15.34	Pk	Horizontal
4882.184	48.21	-3.68	44.53	54	-9.47	AV	Horizontal
High Channel (2480 MHz)							
4960.358	65.27	-3.59	61.68	74	-12.32	pk	Vertical
4960.358	46.37	-3.59	42.78	54	-11.22	AV	Vertical
4960.236	63.29	-3.59	59.7	74	-14.3	pk	Horizontal
4960.236	44.38	-3.59	40.79	54	-13.21	AV	Horizontal

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Meter Reading + Factor

Margin = Limit - Emission Level

Radiated band edge:
BT- non-hopping

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		
GFSK							
2390	63.79	-12.99	50.8	74	-23.2	peak	Vertical
2390	58.48	-12.99	45.49	74	-28.51	peak	Horizontal
2483.5	71.67	-12.78	58.89	74	-15.11	peak	Vertical
2483.5	67.32	-12.78	54.54	74	-19.46	peak	Horizontal
π/4-DQPSK							
2390	61.47	-12.99	48.48	74	-25.52	peak	Vertical
2390	67.29	-12.99	54.3	74	-19.7	peak	Horizontal
2483.5	67.49	-12.78	54.71	74	-19.29	peak	Vertical
2483.5	68.21	-12.78	55.43	74	-18.57	peak	Horizontal
8DPSK							
2390	62.68	-12.99	49.69	74	-24.31	peak	Vertical
2390	71.29	-12.99	58.3	74	-15.7	peak	Horizontal
2483.5	69.39	-12.78	56.61	74	-17.39	peak	Vertical
2483.5	72.27	-12.78	59.49	74	-14.51	peak	Horizontal

NOTE: The result(PK) less than AV limite,No need shown AV result.

BT-GFSK- hopping

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		
GFSK							
2390	71.58	-12.99	58.59	74	-15.41	peak	Vertical
2390	68.38	-12.99	55.39	74	-18.61	peak	Horizontal
2483.5	71.21	-12.78	58.43	74	-15.57	peak	Vertical
2483.5	76.57	-12.78	63.79	74	-10.21	peak	Horizontal
π/4-DQPSK							
2390	72.58	-12.99	59.59	74	-14.41	peak	Vertical
2390	74.48	-12.99	61.49	74	-12.51	peak	Horizontal
2483.5	71.52	-12.78	58.74	74	-15.26	peak	Vertical
2483.5	68.52	-12.78	55.74	74	-18.26	peak	Horizontal
8DPSK							
2390	72.63	-12.99	59.64	74	-14.36	peak	Vertical
2390	74.57	-12.99	61.58	74	-12.42	peak	Horizontal
2483.5	74.25	-12.78	61.47	74	-12.53	peak	Vertical
2483.5	67.68	-12.78	54.9	74	-19.1	peak	Horizontal

4. NUMBER OF HOPPING CHANNEL

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)(iii)	Number of Hopping Channel	≥15	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

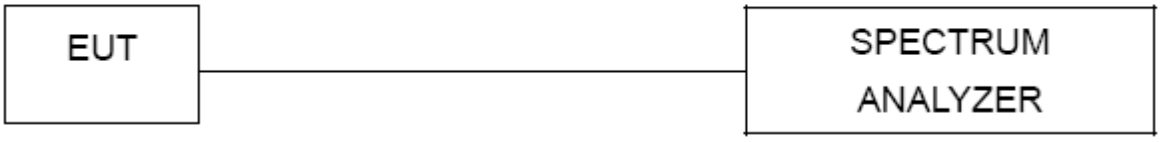
4.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



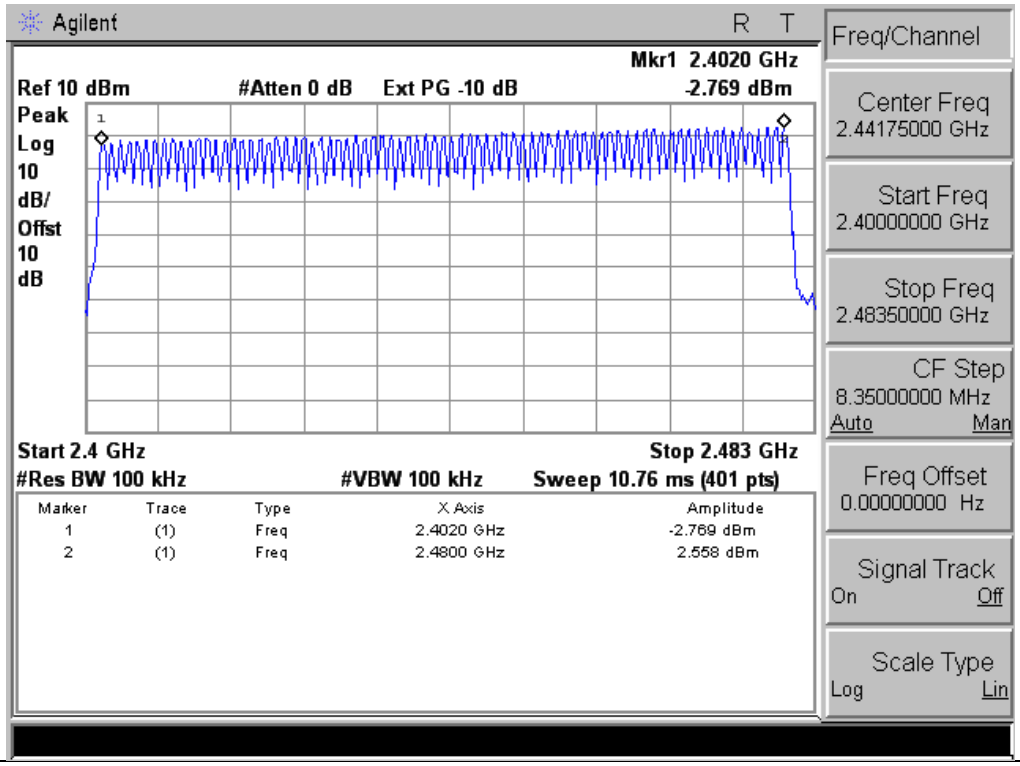
4.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Hopping Mode		

Number of Hopping Channel	79



5. AVERAGE TIME OF OCCUPANCY

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)(iii)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

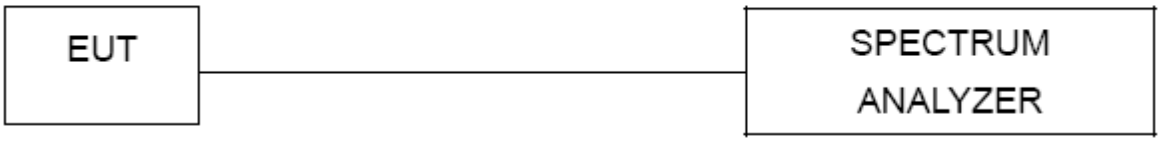
5.1.1 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyzer
b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
d. Sweep Time is more than once pulse time.
e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
f. Measure the maximum time duration of one single pulse.
g. Set the EUT for DH5, DH3 and DH1 packet transmitting.
h. Measure the maximum time duration of one single pulse.
i. DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 3.37 x 31.6 = 106.6 within 31.6 seconds.
j. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 5.06 x 31.6 = 160 within 31.6 seconds.
k. DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 10.12 x 31.6 = 320 within 31.6 seconds.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

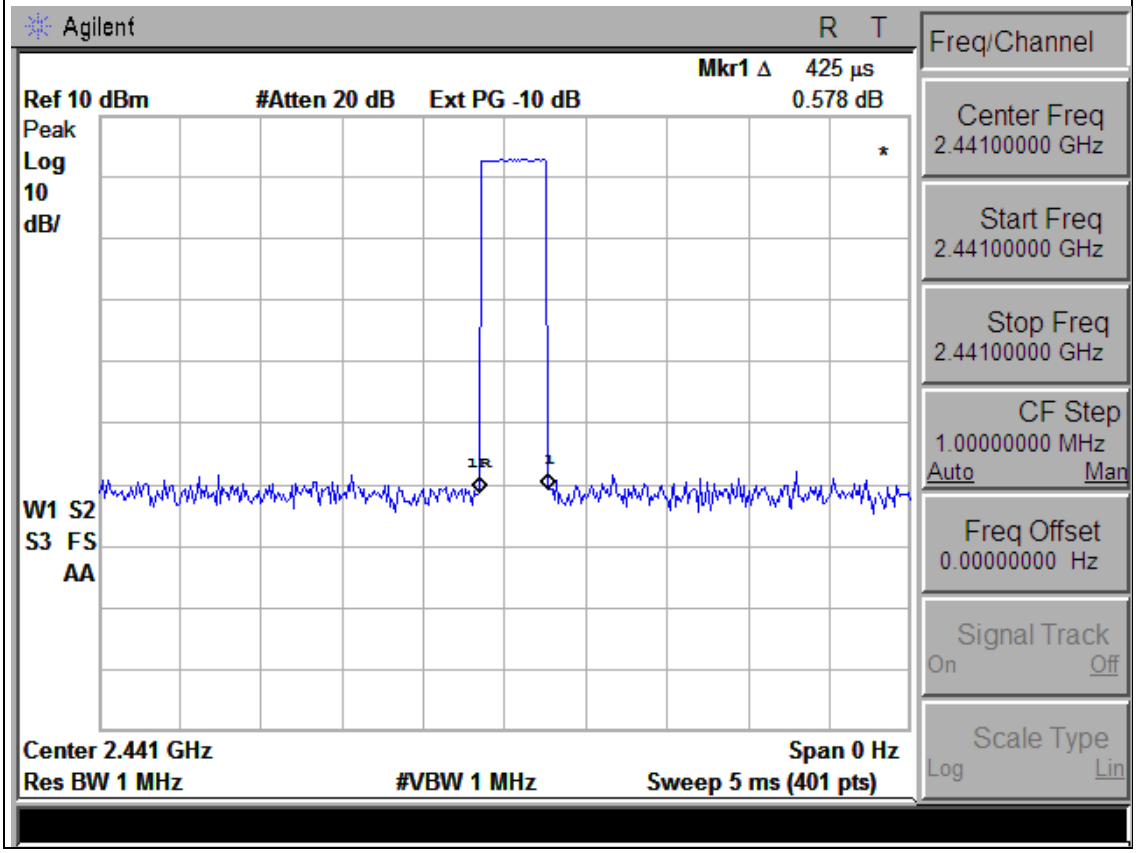
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 TEST RESULTS

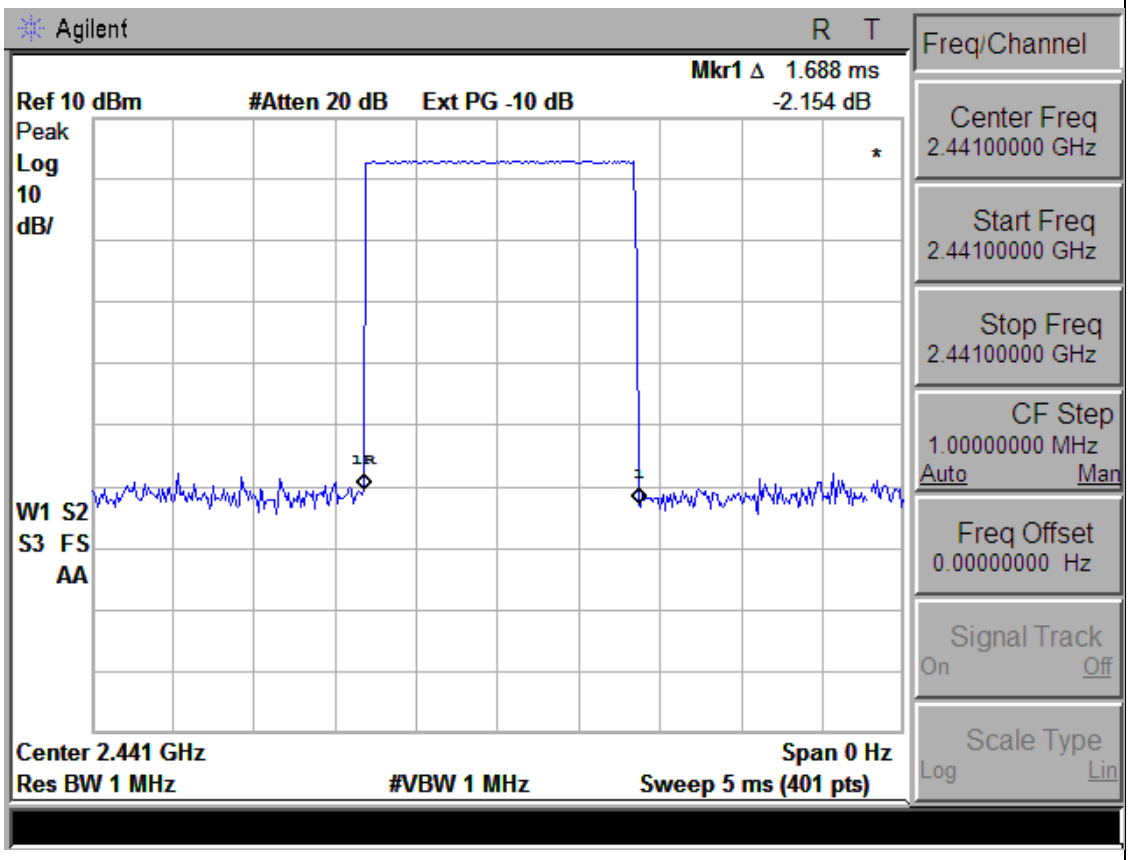
EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	GFSK(1Mbps)-DH1/DH3/DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH1	2441 MHz	0.43	0.14	0.4
DH3	2441 MHz	1.69	0.27	0.4
DH5	2441 MHz	2.94	0.31	0.4

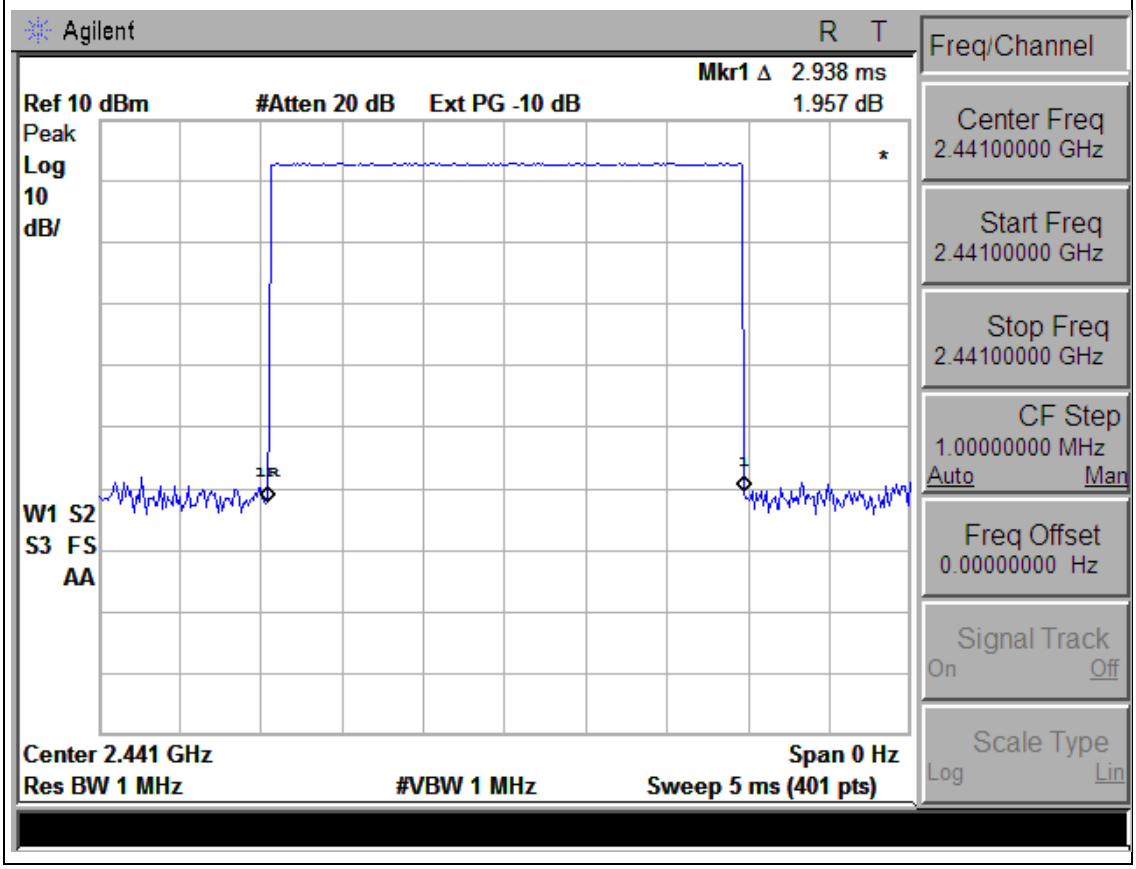
CH39-DH1



CH39-DH3



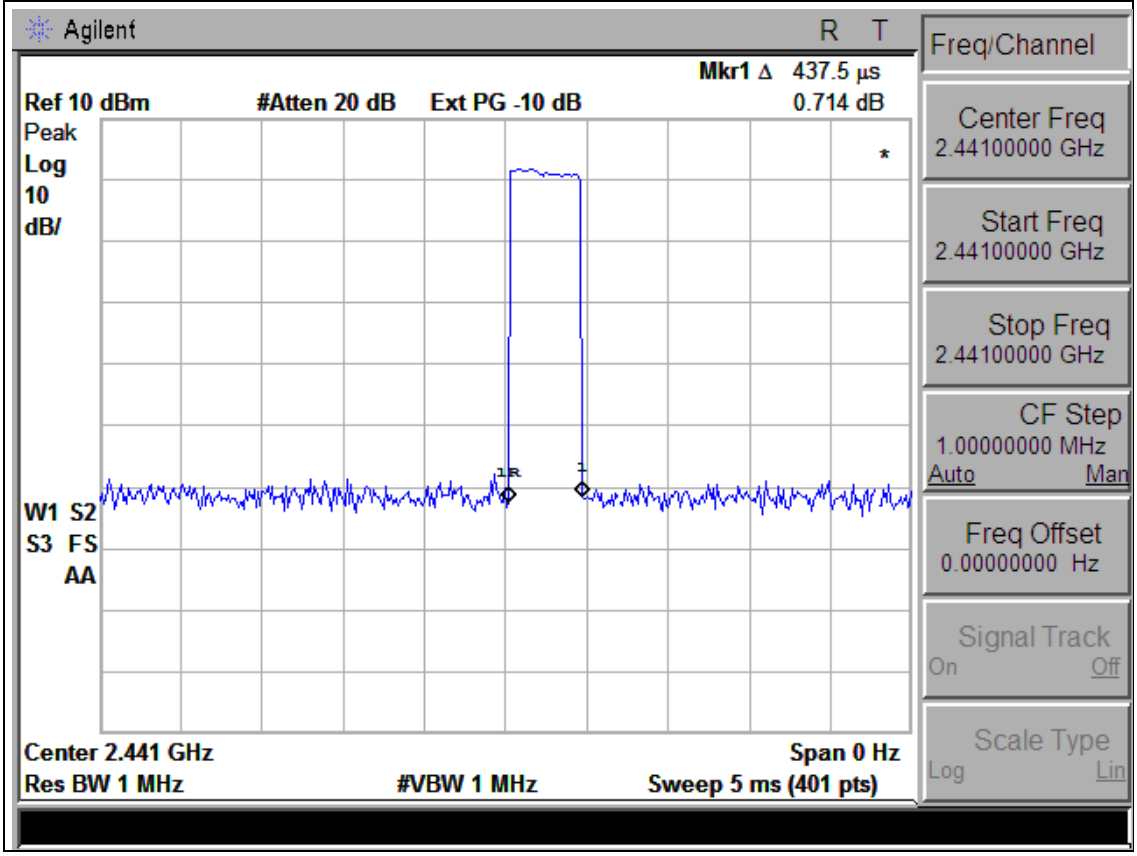
CH39-DH5



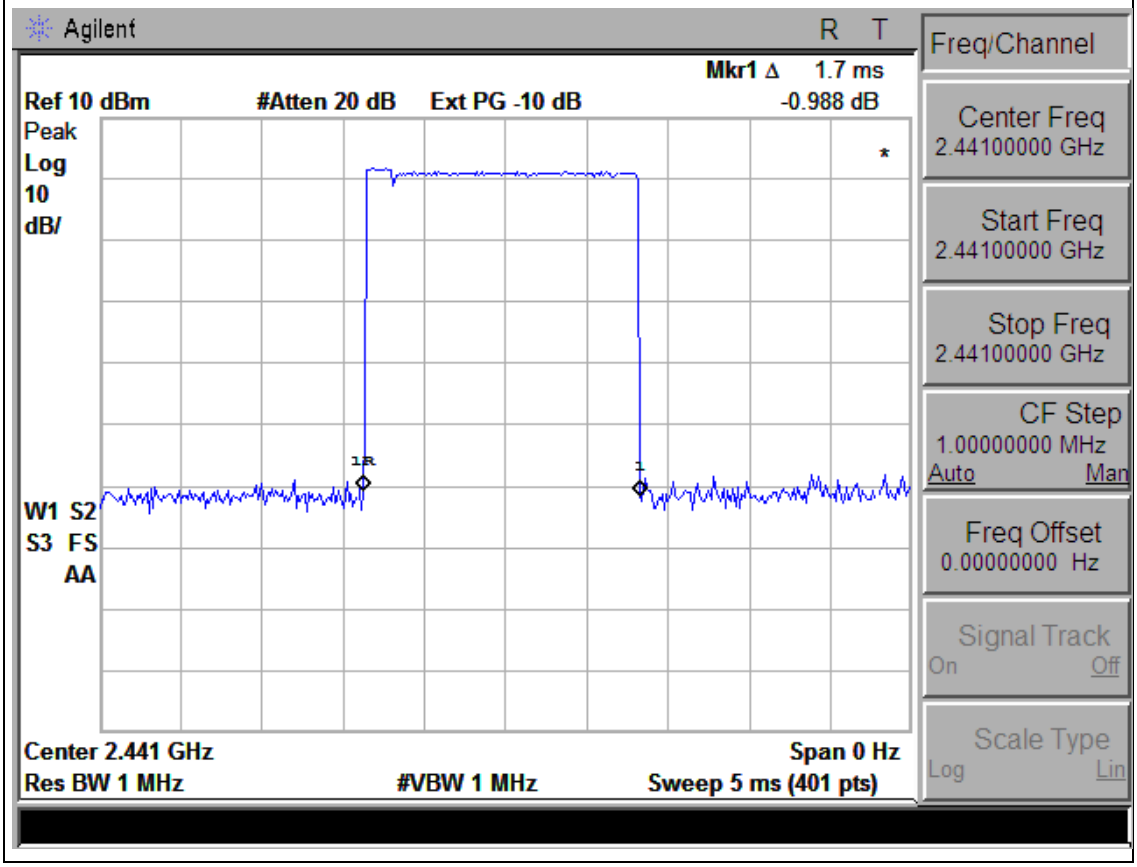
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	π/4-DQPSK(2Mbps) –DH1/DH3/DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH1	2441 MHz	0.44	0.14	0.4
DH1	2441 MHz	1.70	0.27	0.4
DH1	2441 MHz	2.94	0.31	0.4

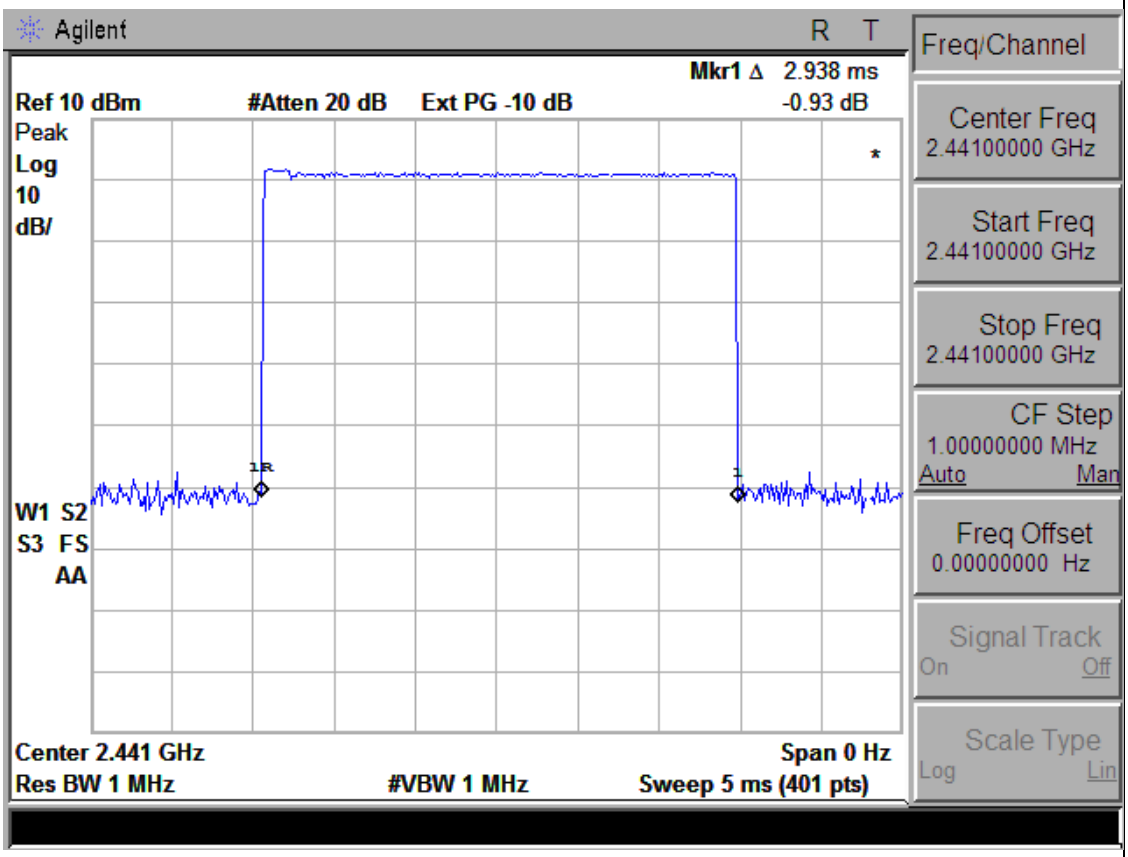
CH39-DH1



CH39-DH3



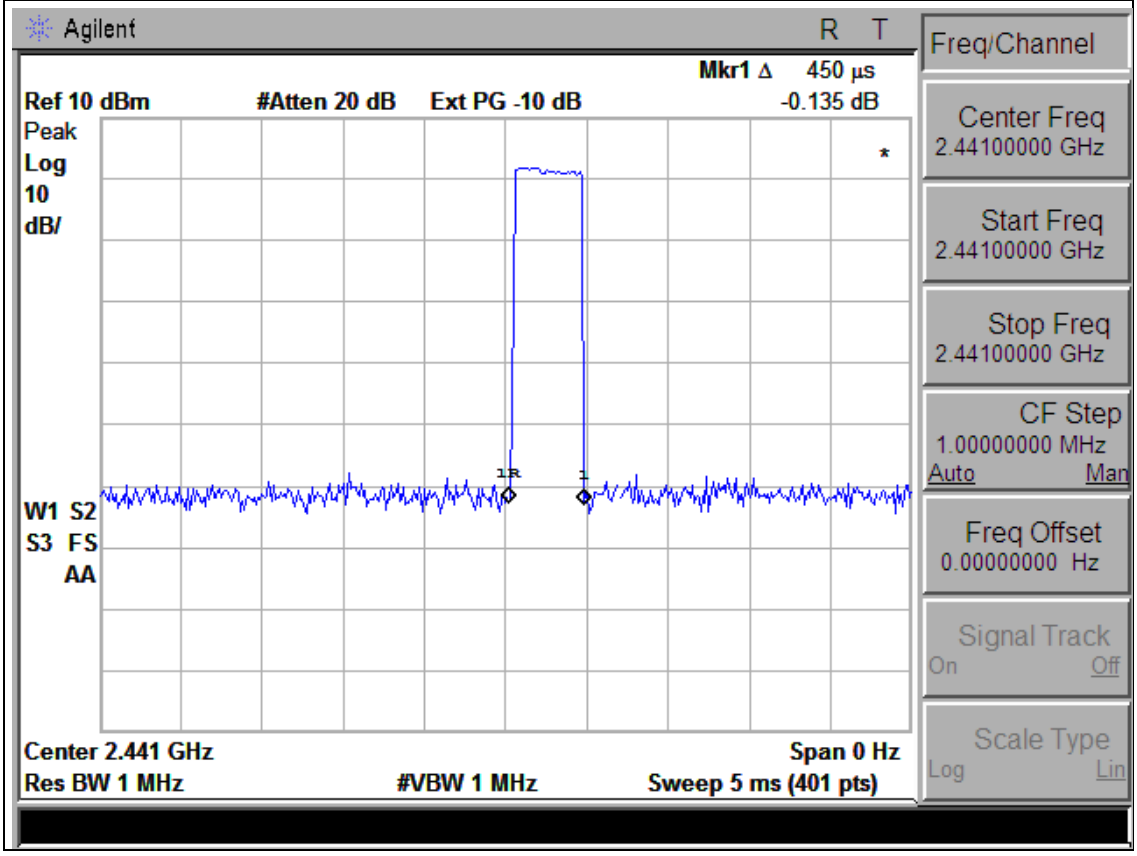
CH39-DH5



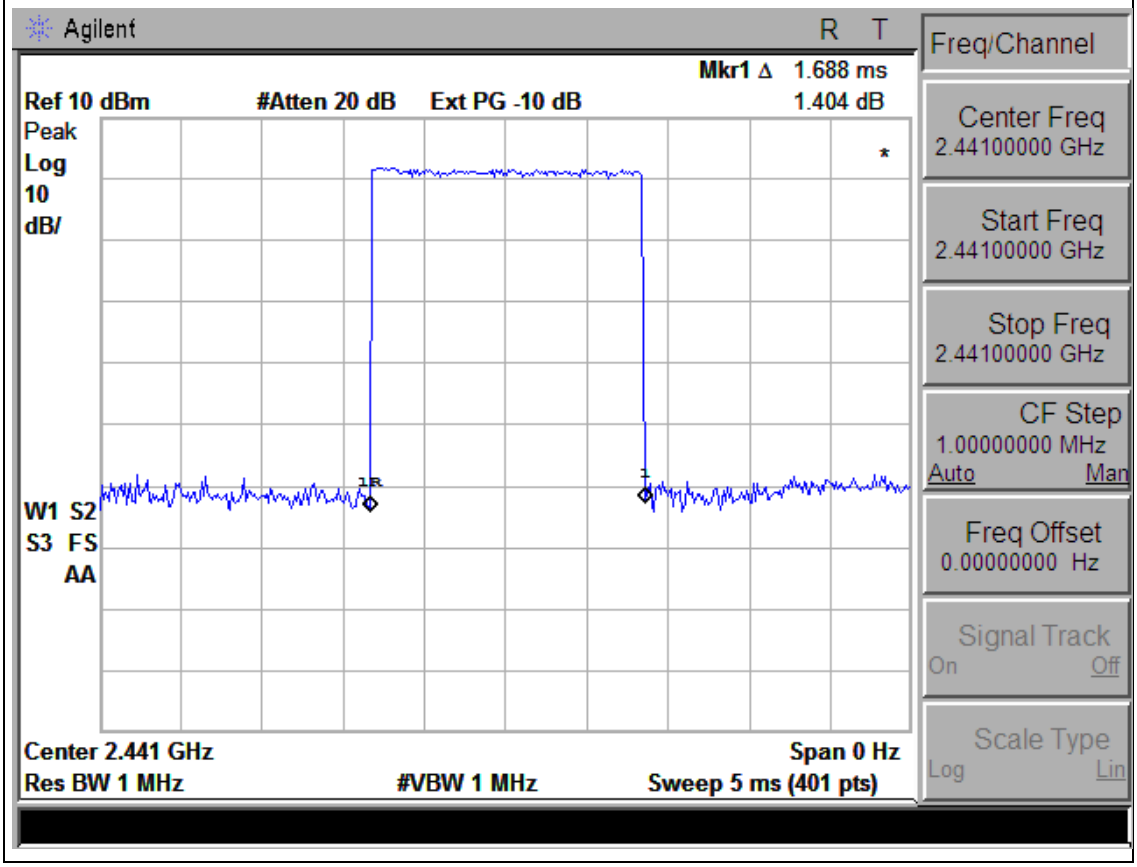
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	8-DPSK(3Mbps) -DH1/DH3/DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH1	2441 MHz	0.50	0.16	0.4
DH3	2441 MHz	0.50	0.08	0.4
DH5	2441 MHz	0.50	0.05	0.4

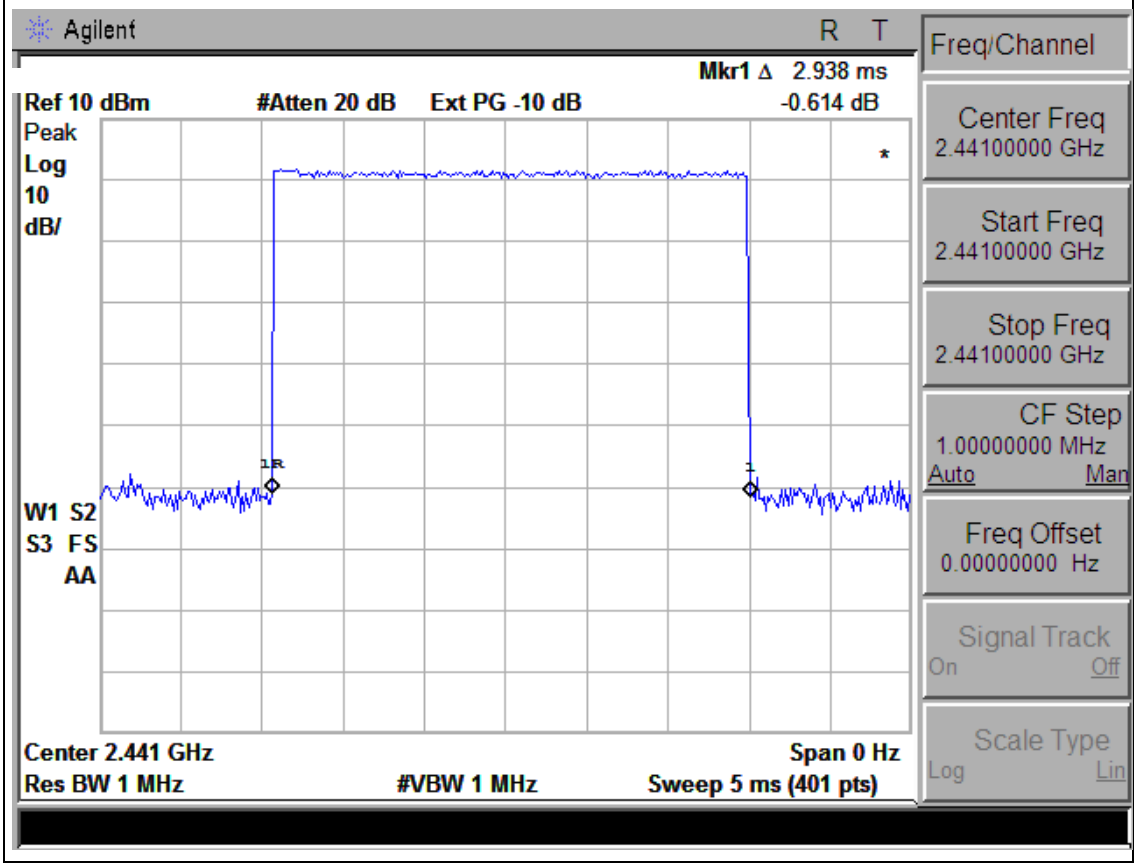
CH39-DH1



CH39-DH3



CH39-DH5



5.1.6. Hopping Channel Separation Measurement

5.2 APPLIED PROCEDURES / LIMIT

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 20 dB bandwidth of the hopping channel, whichever is greater.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

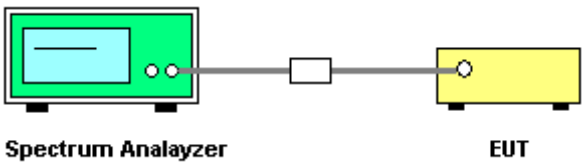
5.2.1 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
b. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
c. The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were utilised for channel separation measurement.

5.2.2 DEVIATION FROM STANDARD

No deviation.

5.2.3 TEST SETUP



5.2.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

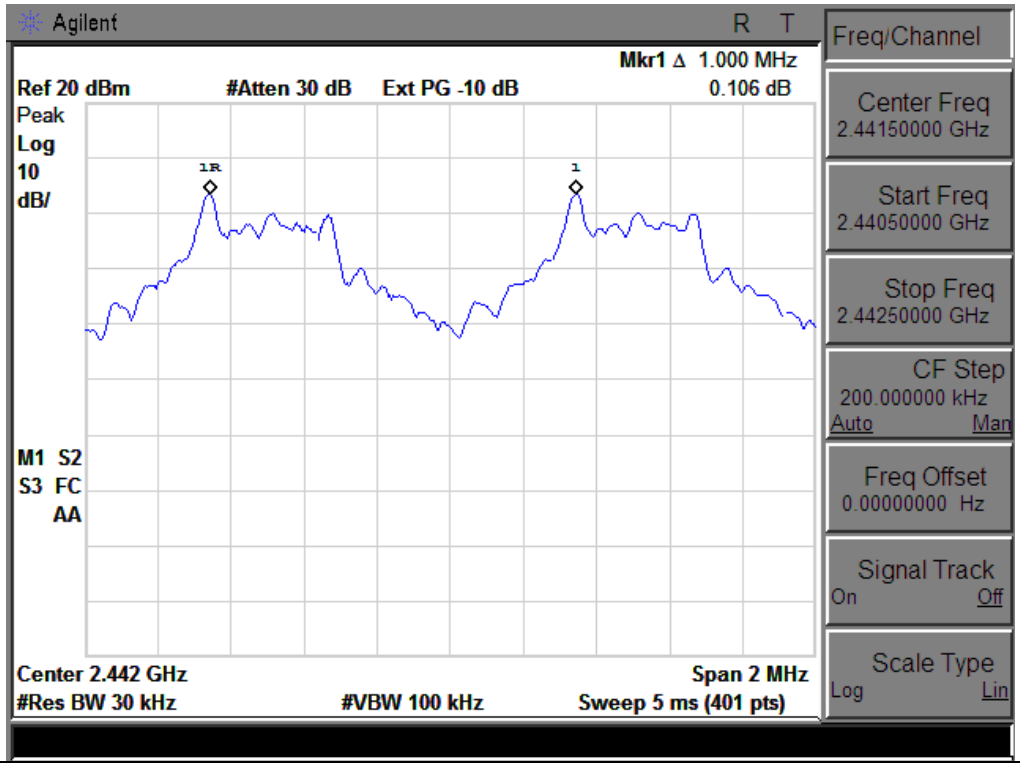
5.2.5 TEST RESULTS

EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	CH00 / CH39 /CH78 (GFSK(1Mbps) Mode)		

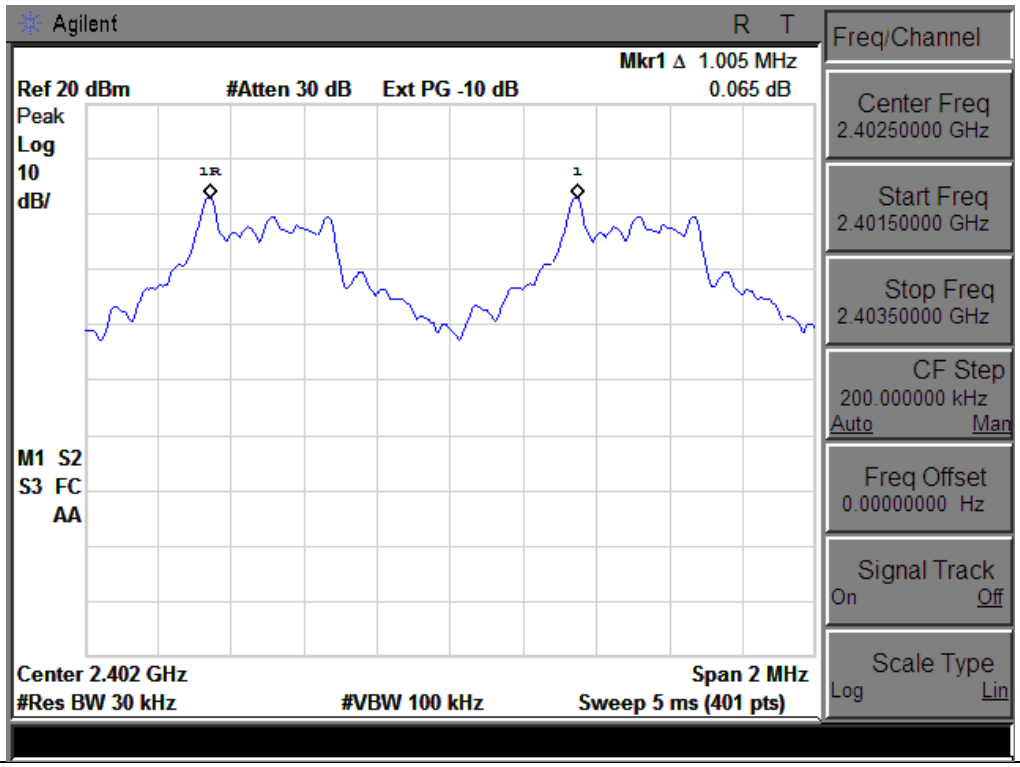
Frequency	Ch. Separation (MHz)	Result	limit(KHz)
2402 MHz	1.000	**Complies**	833.595
2441 MHz	1.005	**Complies**	835.514
2480 MHz	1.005	**Complies**	818.675

Ch. Separation Limits: >20dB bandwidth

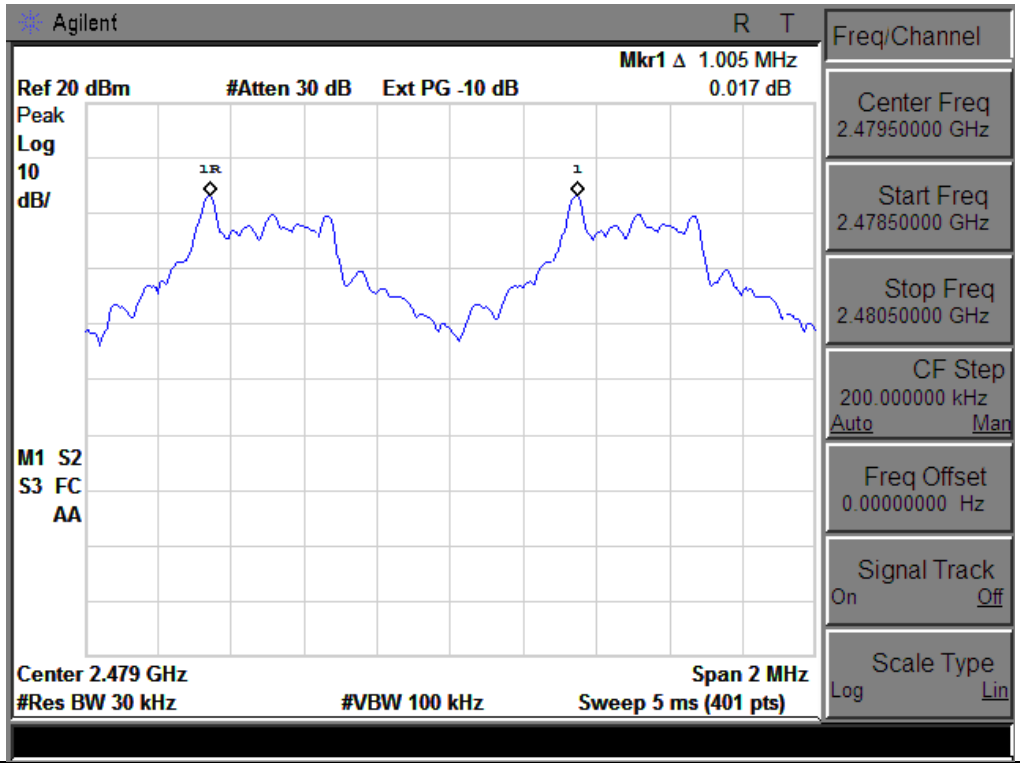
CH00 -1Mbps



CH39 -1Mbps



CH78 -1Mbps

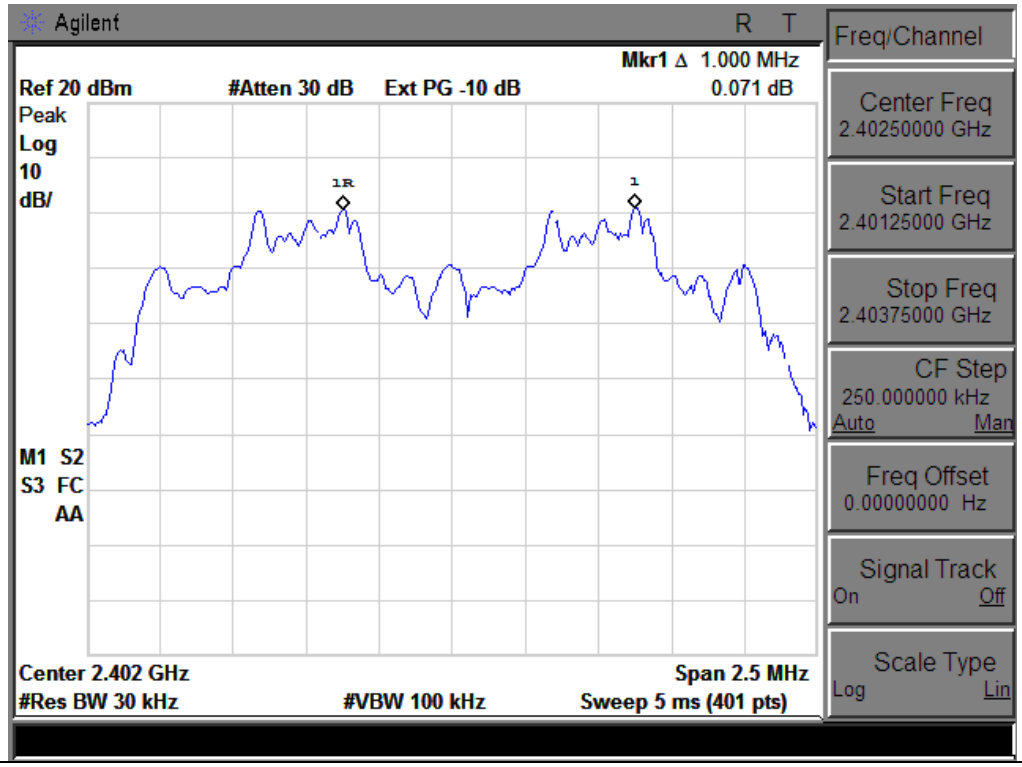


EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	CH00 / CH39 /CH78 (π/4-DQPSK(2Mbps) Mode)		

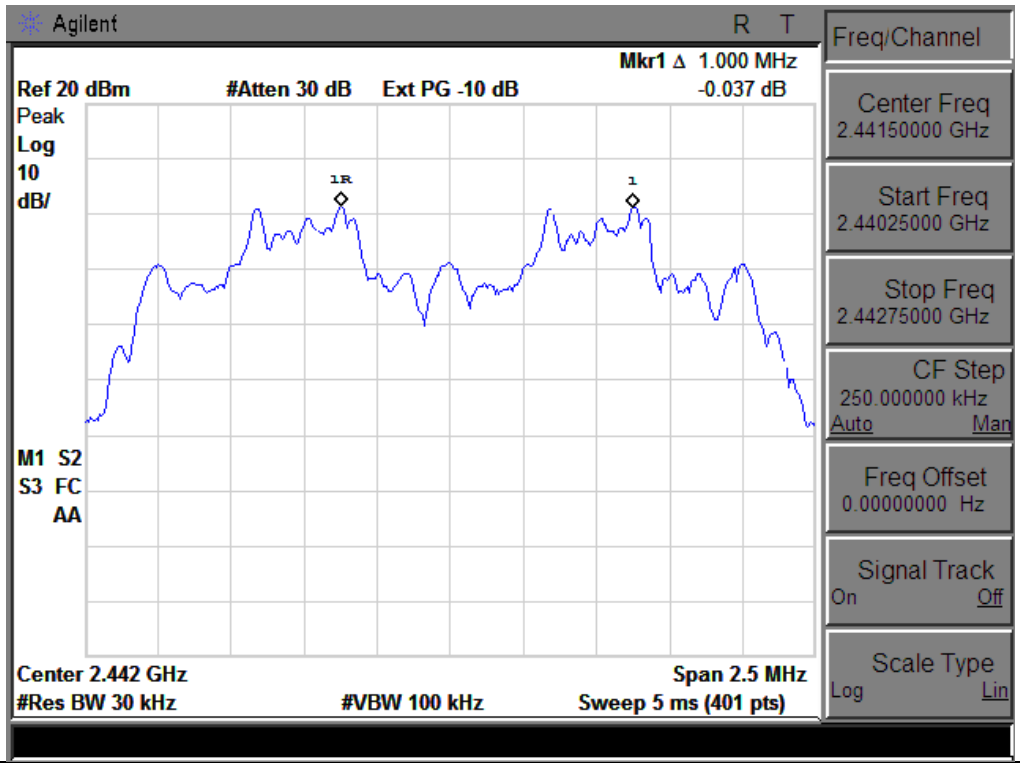
Frequency	Ch. Separation (MHz)	Result	limit(KHz)
2402 MHz	1.000	**Complies**	833.595
2441 MHz	1.000	**Complies**	835.514
2480 MHz	1.000	**Complies**	818.675

Ch. Separation Limits: >20dB bandwidth

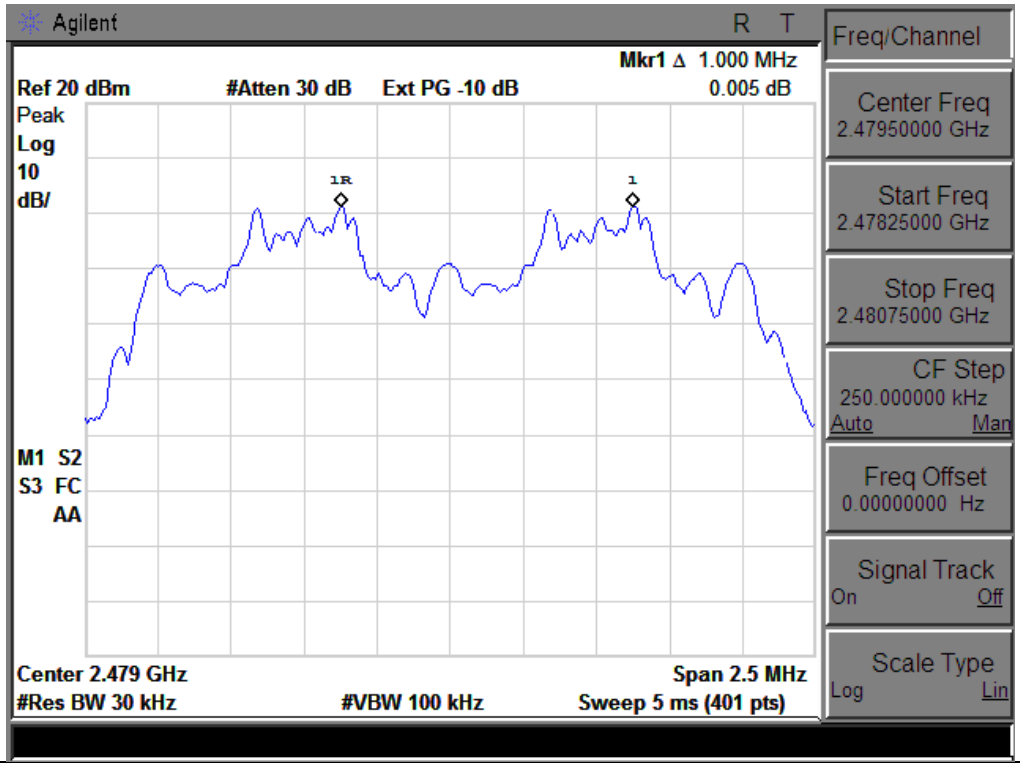
CH00 -1Mbps



CH39 -1Mbps



CH78 -1Mbps

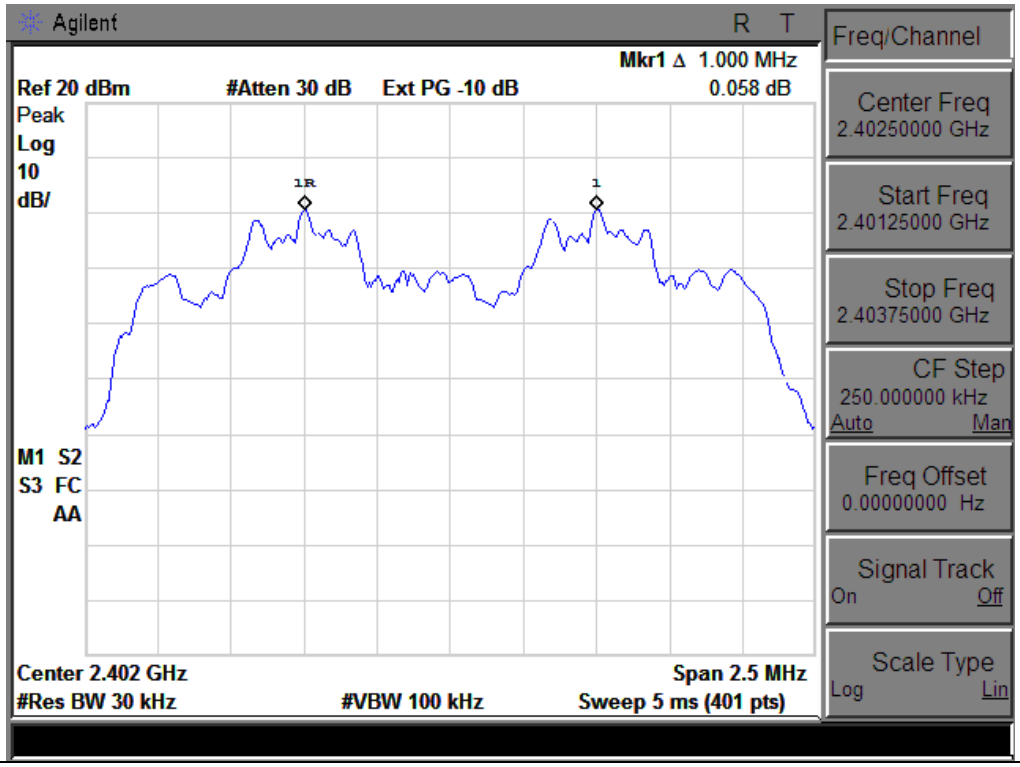


EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	CH00 / CH39 /CH78 (8-DPSK(3Mbps)Mode)		

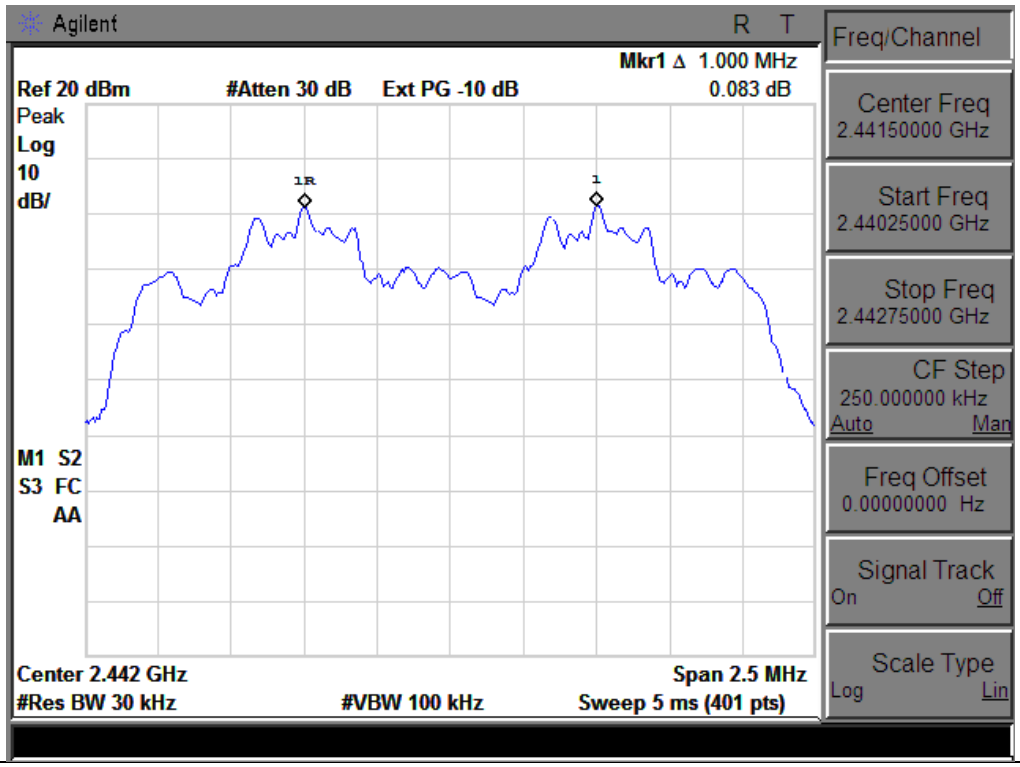
Frequency	Ch. Separation (MHz)	Result	limit(KHz)
2402 MHz	1.000	**Complies**	833.595
2441 MHz	1.000	**Complies**	835.514
2480 MHz	1.000	**Complies**	818.675

Ch. Separation Limits: >20dB bandwidth

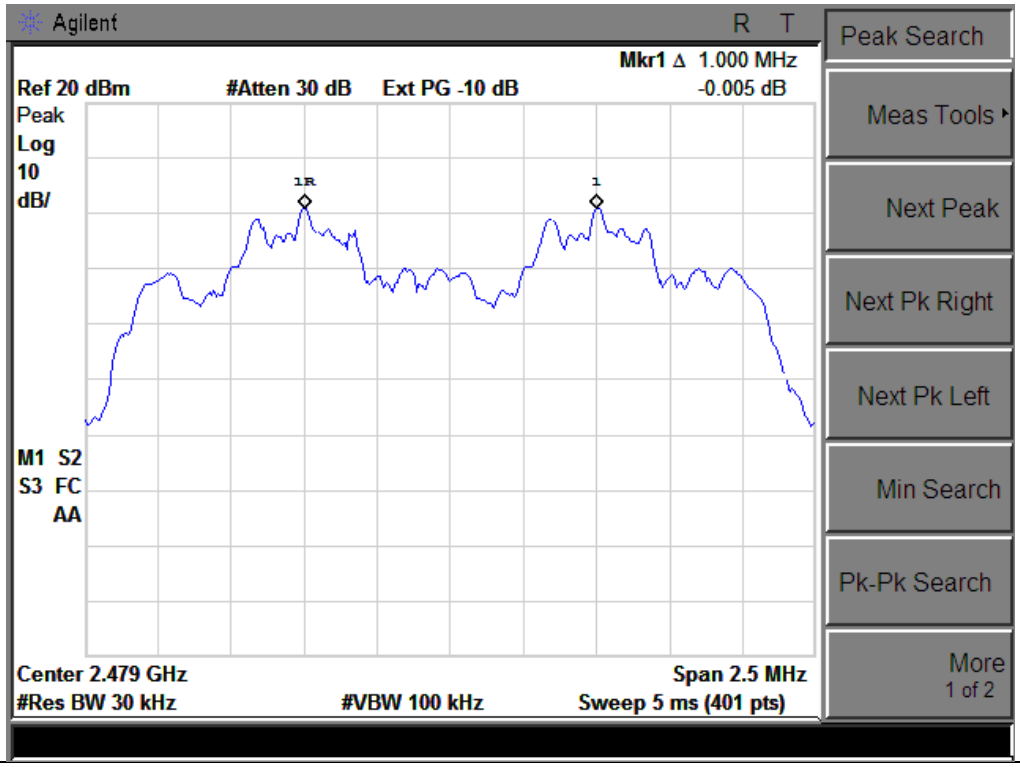
CH00 -1Mbps



CH39 -1Mbps



CH78 -1Mbps



6. BANDWIDTH TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)	Bandwidth	(20dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

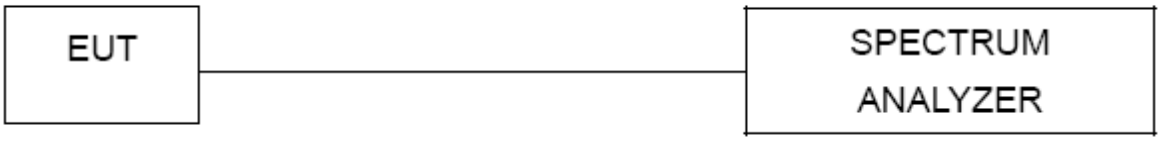
6.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 30KHz, VBW=100KHz, Sweep time = Auto.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

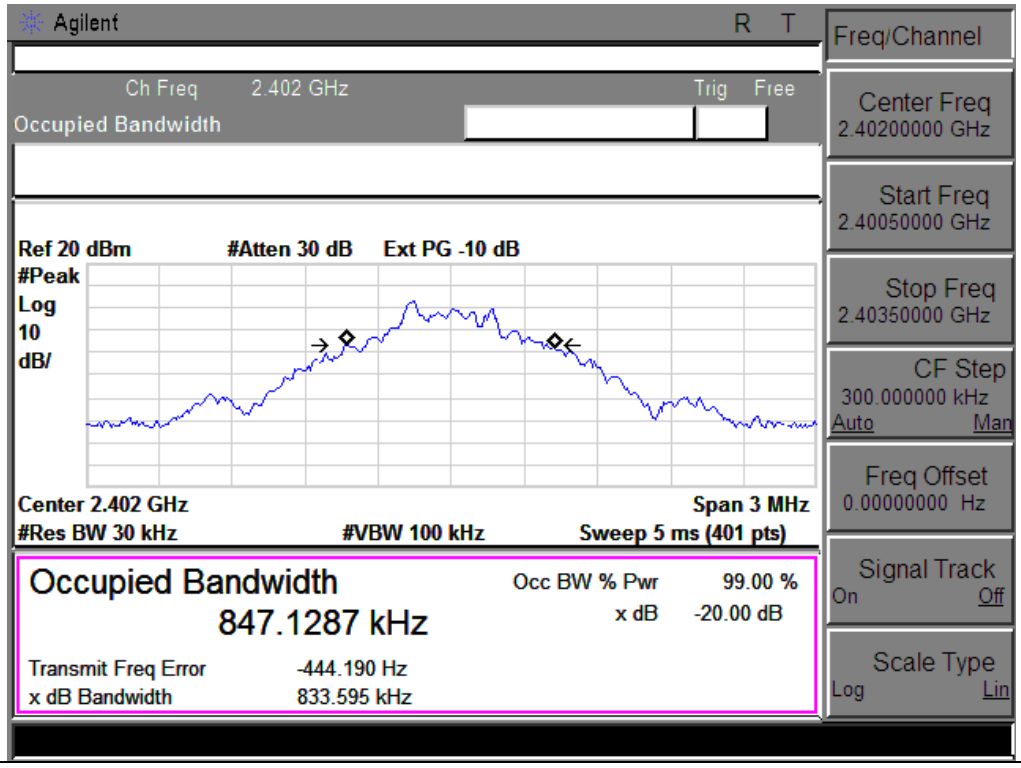
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

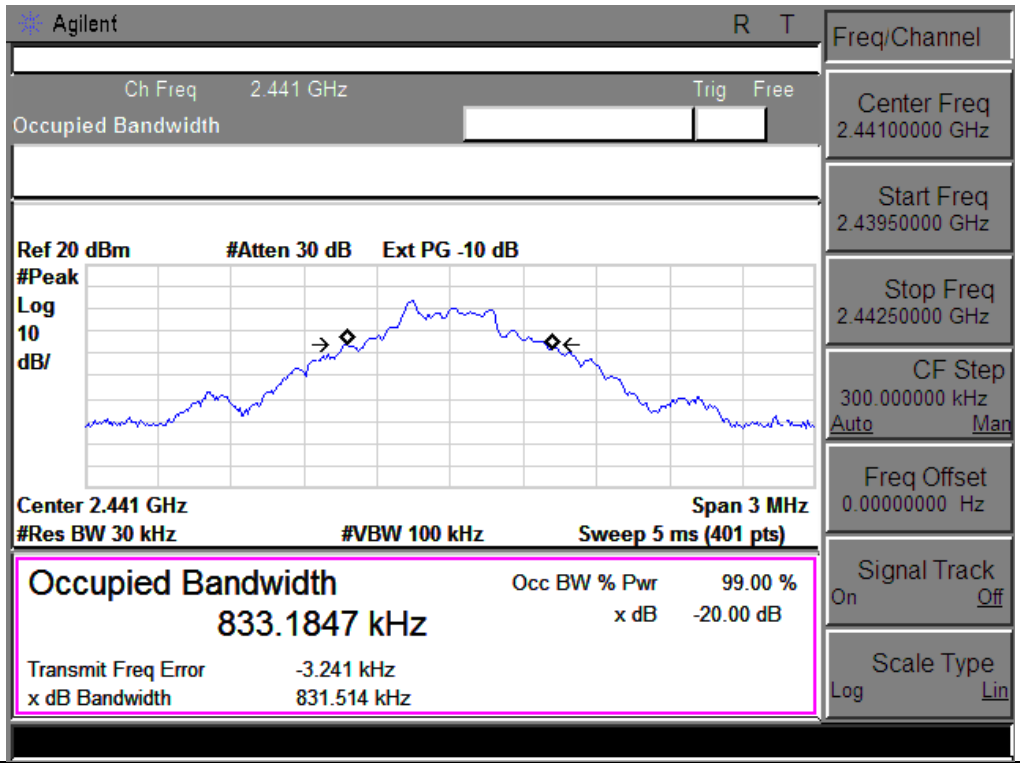
EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	GFSK(1Mbps)CH00 / CH39 /C78		

Frequency	20dB Bandwidth (kHz)	Result
2402 MHz	833.595	**PASS**
2441 MHz	831.514	**PASS**
2480 MHz	818.675	**PASS**

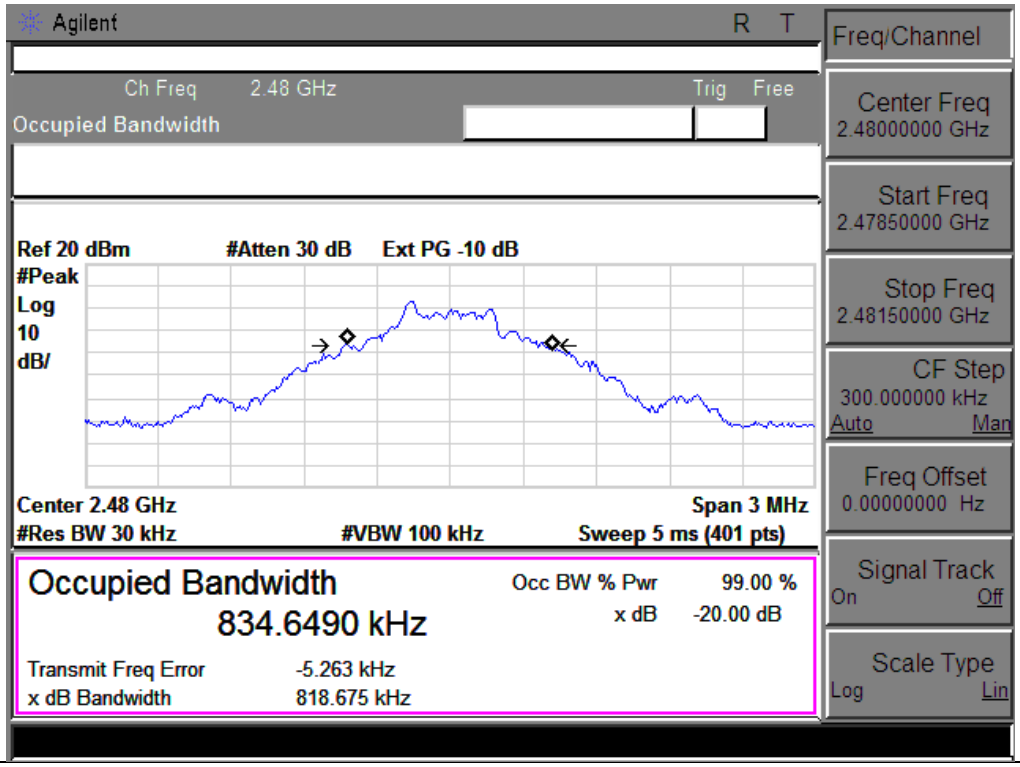
CH00 -1Mbps



CH39 -1Mbps



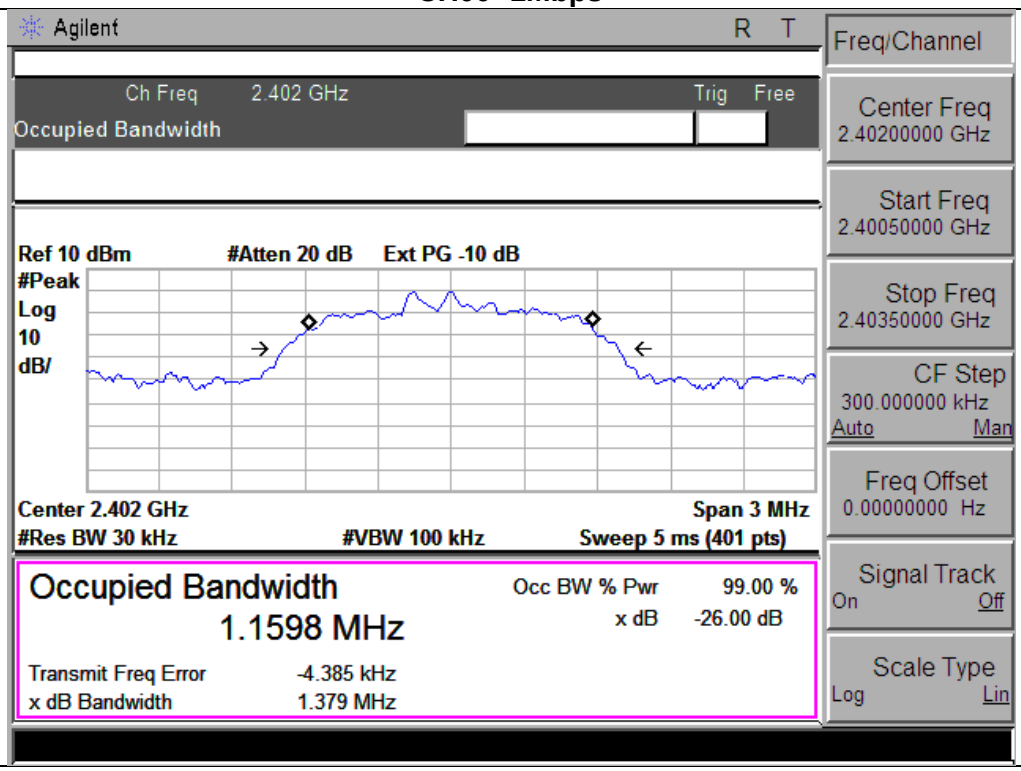
CH78 -1Mbps



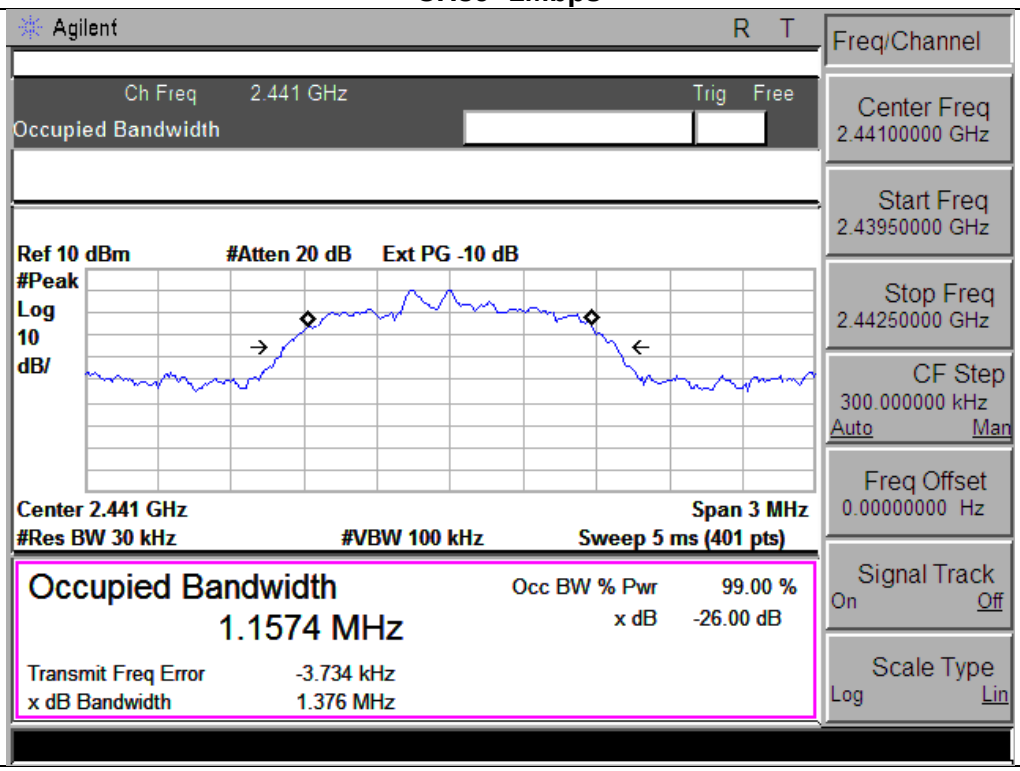
EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	π/4-DQPSK(2Mbps)CH00 / CH39 /C78		

Frequency	**20dB Bandwidth (kHz)**	**Result**
2402 MHz	1.379	**PASS**
2441 MHz	1.376	**PASS**
2480 MHz	1.366	**PASS**

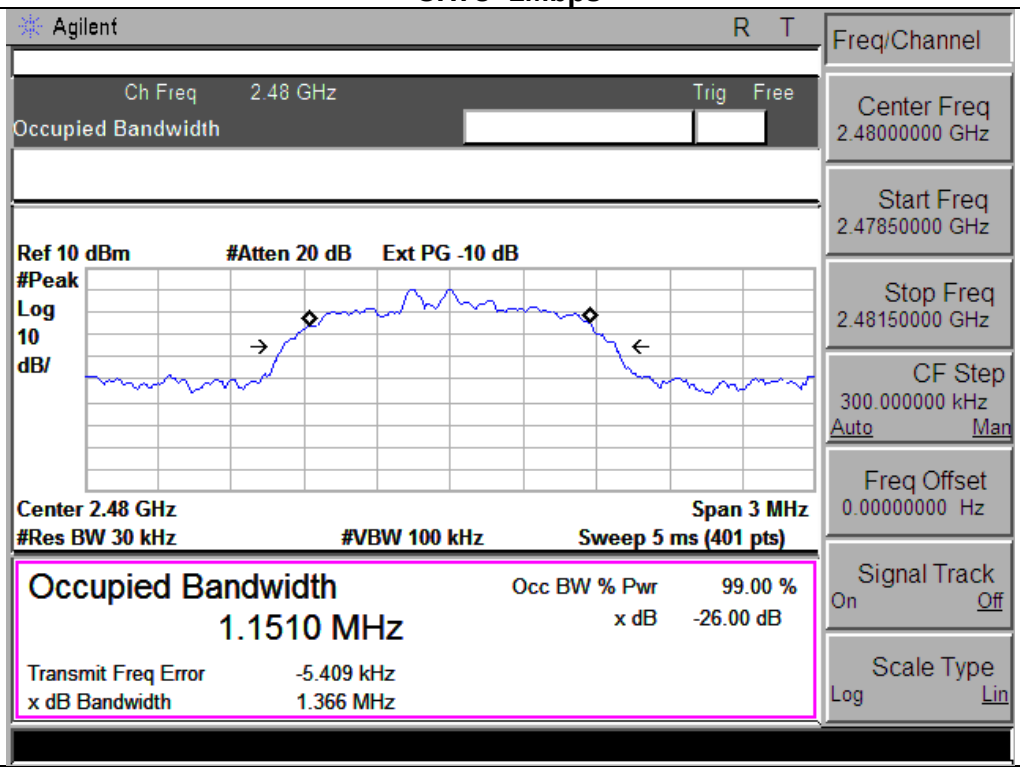
CH00 -1Mbps



CH39 -1Mbps



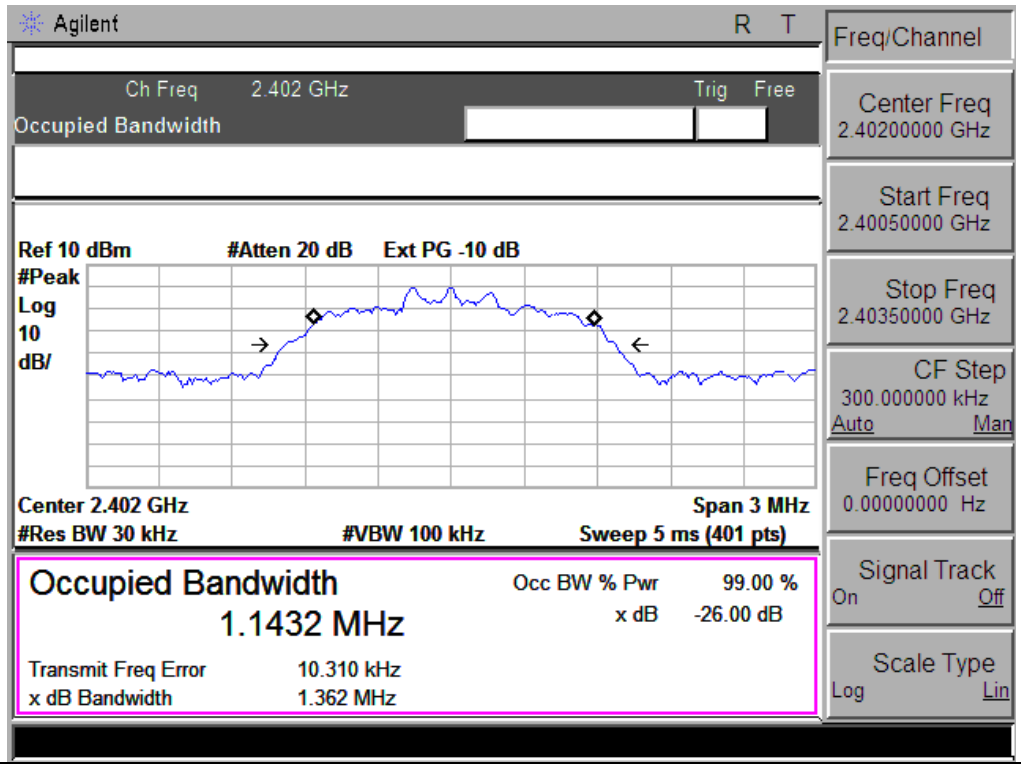
CH78 -1Mbps



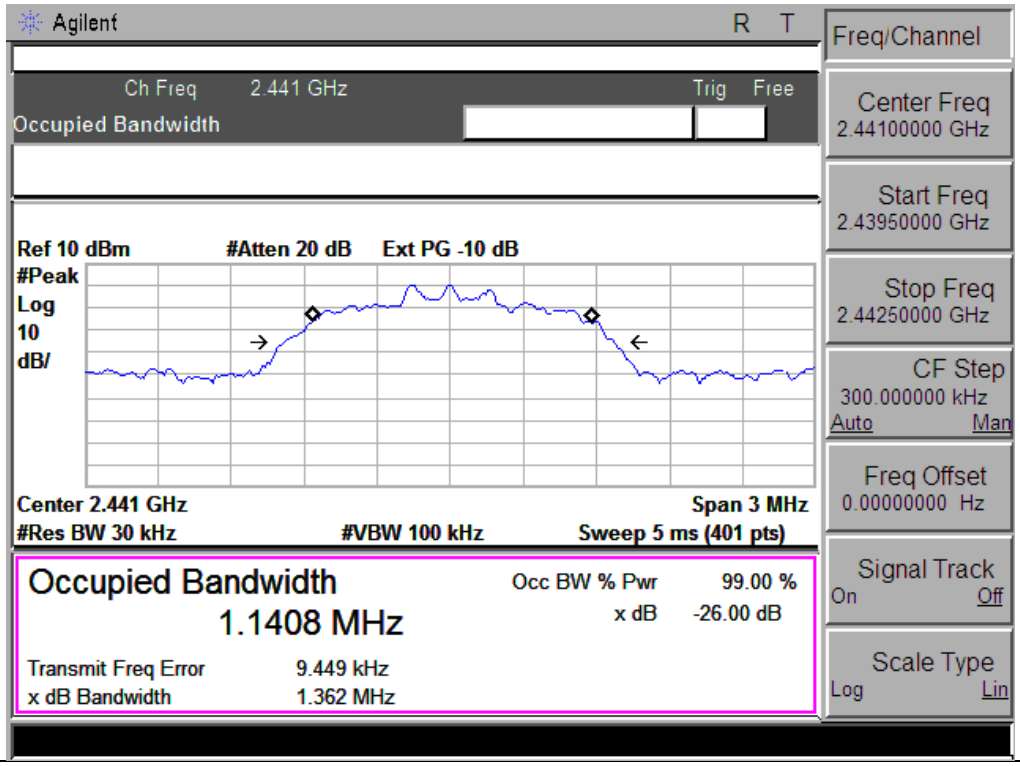
EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	8-DPSK(3Mbps)CH00 / CH39 /C78		

Frequency	20dB Bandwidth (kHz)	Result
2402 MHz	1.362	**PASS**
2441 MHz	1.362	**PASS**
2480 MHz	1.349	**PASS**

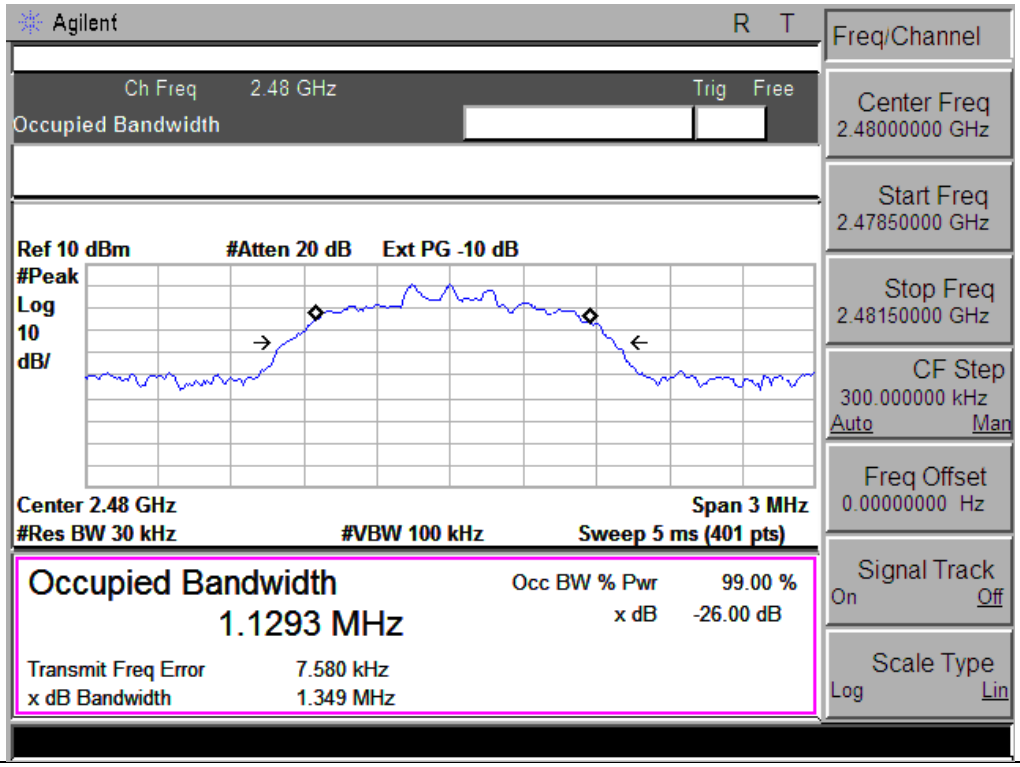
CH00 -1Mbps



CH39 -1Mbps



CH78 -1Mbps



7. PEAK OUTPUT POWER TEST

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (b)(i)	Peak Output Power	0.125 w or 20.96dBm	2400-2483.5	PASS

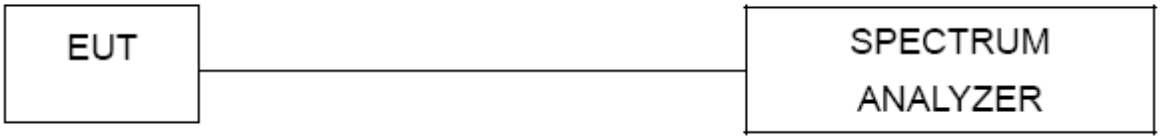
7.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 1MHz, VBW= 1MHz, Sweep time = Auto.

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5 TEST RESULTS

EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	CH00/ CH39 /CH78 GFSK(1Mbps)		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH00	2402	3.34	30	1
CH39	2441	3.65	30	1
CH78	2480	3.27	30	1

EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	CH00/ CH39 /CH78 π/4-DQPSK(2Mbps)		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH00	2402	2.38	30	1
CH39	2441	2.47	30	1
CH78	2480	2.29	30	1

EUT：	Smart Phone	Model Name ：	Agora Ring Pro
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	CH00/ CH39 /CH78 8-DPSK(3Mbps)		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH00	2402	2.16	30	1
CH39	2441	2.27	30	1
CH78	2480	2.38	30	1

8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

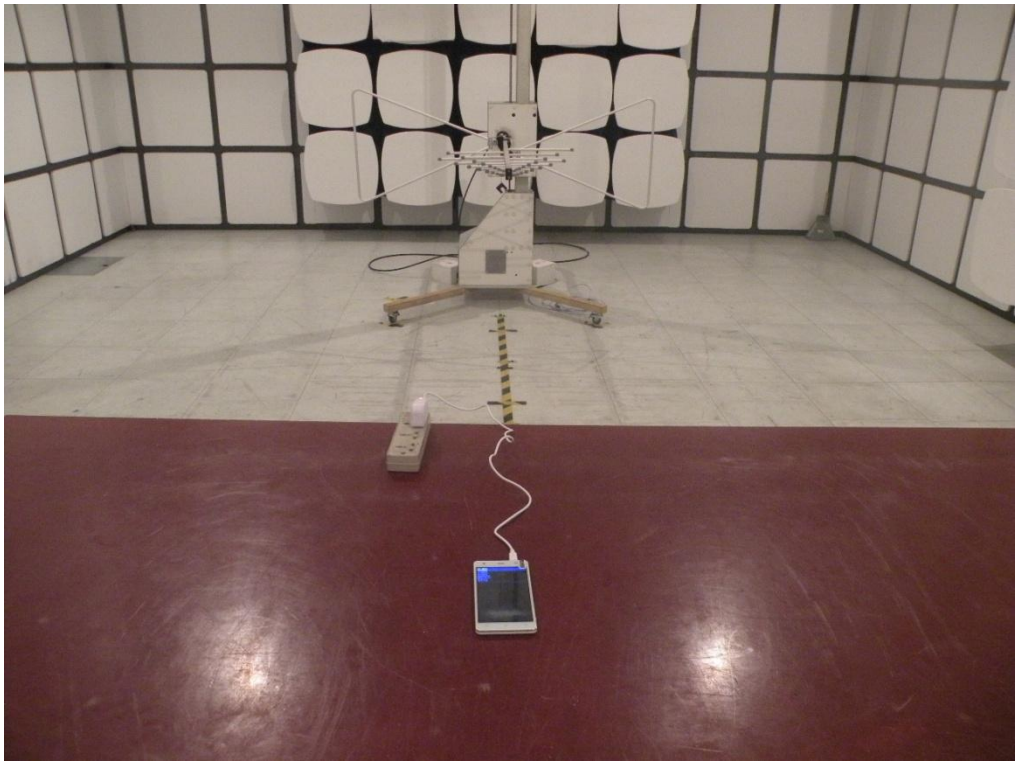
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

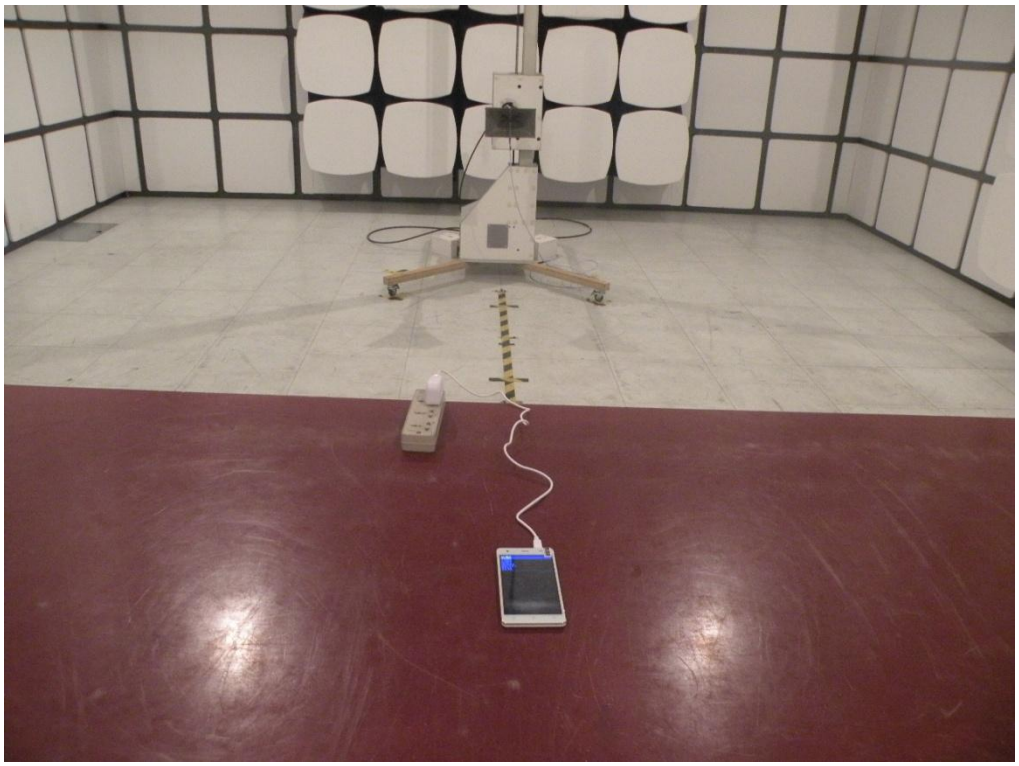
8.2 EUT ANTENNA

The EUT antenna is integral Antenna. It comply with the standard requirement.

8.2.1. EUT TEST PHOTO

Radiated Measurement Photos





Conducted Measurement Photos